KV-1352E

SERVICE MANUAL





P2E CHASSIS

September, 1982

SPECIFICATIONS

Television system CCIR TV standards (system B, G and H)

Color system PAL

AL

Channel coverage

VHF channels E2-4 (Band I) E5-12 (Band III)

UHF channels E21-68 (Band IV/V)

Picture tube 33 cm (13"), 90-degree deflection Trinitron

system (31 cm screen measured diagonal-

ly)

Antenna Speaker 75-ohm standard antenna socket

10 cm (4 inches) dia.

Audio output

2 W (with 10% harmonic distortion)

Power requirements 220-240 V ac, 50 Hz

Power consumption

58 W

Dimensions

Approx. $338 \times 359 \times 378$ mm (w/h/d)

Weight Approx. 11.5 kg

Accessories supplied Remote Commander RM-620

Earphone

Design and specifications are subject to change without notice.







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SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY SHADING AND MARK

ON THE SCHEMATIC DIAGRAMS, EXPLODED
VIEWS AND IN THE PARTS LIST ARE CRITICAL TO
SAFE OPERATION. REPLACE THESE COMPONENTS
WITH SONY PARTS WHOSE PART NUMBERS APPEAR
AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS
PUBLISHED BY SONY. CIRCUIT ADJUSTMENTS
THAT ARE CRITICAL TO SAFE OPERATION ARE
IDENTIFIED IN THIS MANUAL. FOLLOW THESE PROCEDURES WHENEVER CRITICAL COMPONENTS ARE
REPLACED OR IMPROPER OPERATION IS SUSPECTED.

SECTION 1 GENERAL

PRECAUTIONS

USE

- Operate the unit only on 220-240 V ac, 50 Hz.
- Should any liquid or solid object fall into the cabinet, unplug the unit and have it checked by qualified personnel before operating it any further.
- Do not attempt to make any of the adjustments at the small holes in the rear of the unit. These are special ajustments to be performed only by qualified personnel.
- Unplug the unit from the wall outlet if it is not to be used for several days.
- To disconnect the ac power cord, pull it out by the plug. Never pull the cord itself.

INSTALLATION

- Allow adequate air circulation to prevent internal heat build-up. Do not place the unit on surfaces (rugs, blankets, etc.) or near materials (curtains, draperies) that may block the ventilation holes.
- Do not install the unit in a location near heat sources such as radiators or air ducts, or in a place subject to direct sunlight, excessive dust, mechanical vibration or shock.

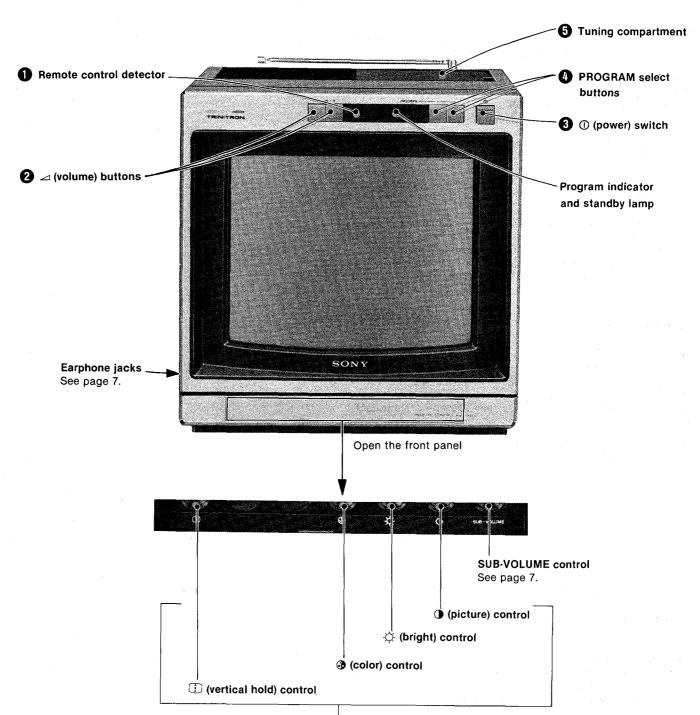
MAINTENANCE

- Save the original shipping carton and packing material; they will come in handy if you ever have to ship your unit. For maximum protection, repack your unit as it was originally packed at the factory.
- To keep the unit looking brand-new, periodically clean it with a soft cloth. Stubborn stains may be removed with a cloth lightly dampened with a mild detergent solution. Never use strong solvents such as thinner or benzine, or abrasive cleansers since these will damage the cabinet. As a safety precaution, unplug the unit before cleaning it.

FEATURES

- Remote-control color television
- Built-in automatic fine tuning
- Reception of all VHF and UHF channels based on CCIR TV standards and PAL color system
- Energy-saving quick-start picture system

1-1. LOCATION OF PARTS AND CONTROLS



Use these controls to adjust the picture. See page 7.

Remote control detector

Point the infrared transmitter of the supplied Remote Commander here.

② ∠ (volume) buttons

Adjust the volume from the level preset by the SUB-VOLUME control. Press the + button to increase the volume and press the - button to decrease.

1 (power) switch

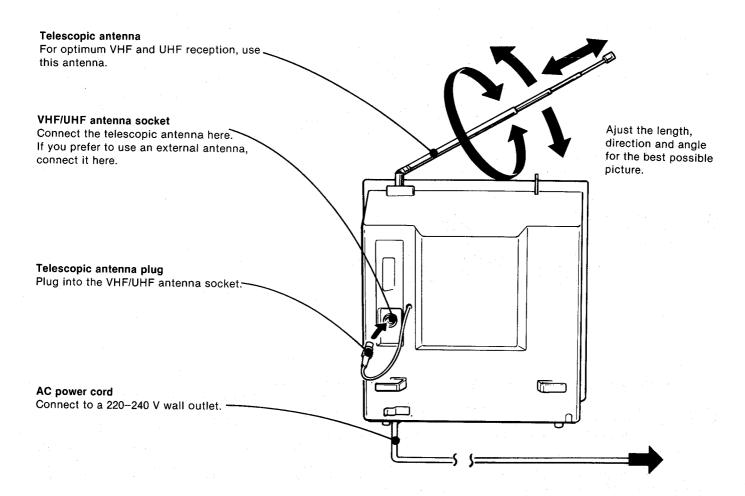
Press to turn the TV on. Press again to turn it off. When the TV is operated with the supplied Remote Commander, this switch must be depressed.

PROGRAM select buttons

Press + to select a program with a higher number and – to select a program with a lower number. This TV has 12 program positions, to each of which a particular channel can be preset.

6 Tuning compartment

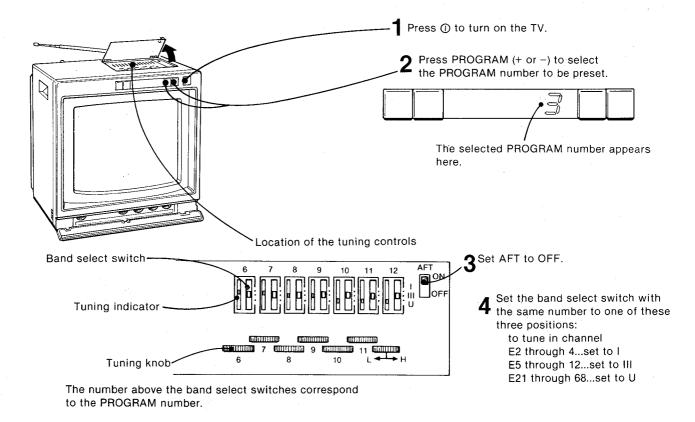
All the switches and controls for channel presetting are in this compartment. For their operation, see page 6.



This TV is supplied with an RM-620 Remote Commander. See "REMOTE CONTROL OPERATION" on page 8.

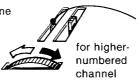
1-2. PROGRAM PRESETTING

Once you preset the programs broadcast in your area, program selection is simply made by pressing the PROGRAM select buttons on the TV or by using hand-held Remote Commander. You can preset as many as 12 programs.



Turn the tuning knob with the same number until the desired channel is properly tuned in.

for lowernumbered channel



The tuning indicator provides a visual indication of the approximate location of the tuning knob within the operating range of the band select switch.

Repeat steps 2 through 5 for all the channels you wish to preset.

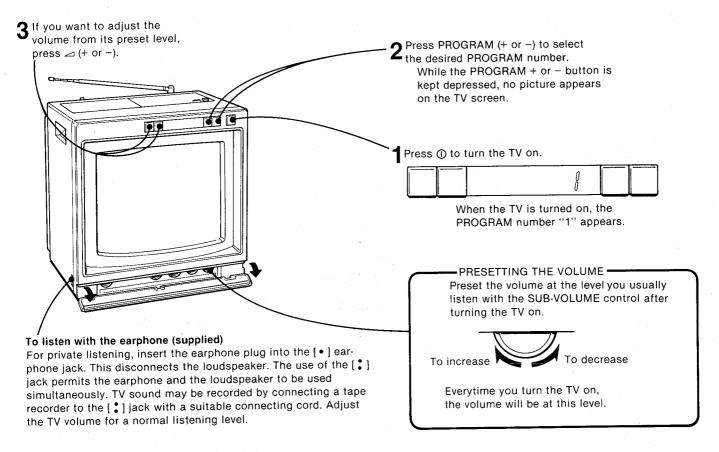
Set AFT to ON when all the channels have been preset, then close the compartment lid.

sharp picture.

- In case of extreme interference or of an extremely weak statio more pleasing results may be maintained with the AFT switch s to OFF.
- After presetting has been completed, select the PROGRA The AFT then locks in the received signal and maintains a number in numerical sequence with the PROGRAM select buttor to check the results of presetting, referring to your local TV listing

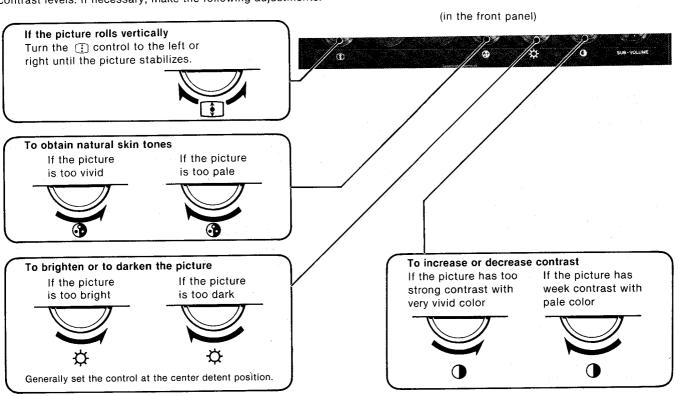
If a Sony OPK-102 SECAM adaptor (optional) is built into the TV, SECAM color programs can be seen. Operate the TV as usual. For details, refer to the instruction manual of the OPK-102.

1-3. HOW TO OPERATE THE TV



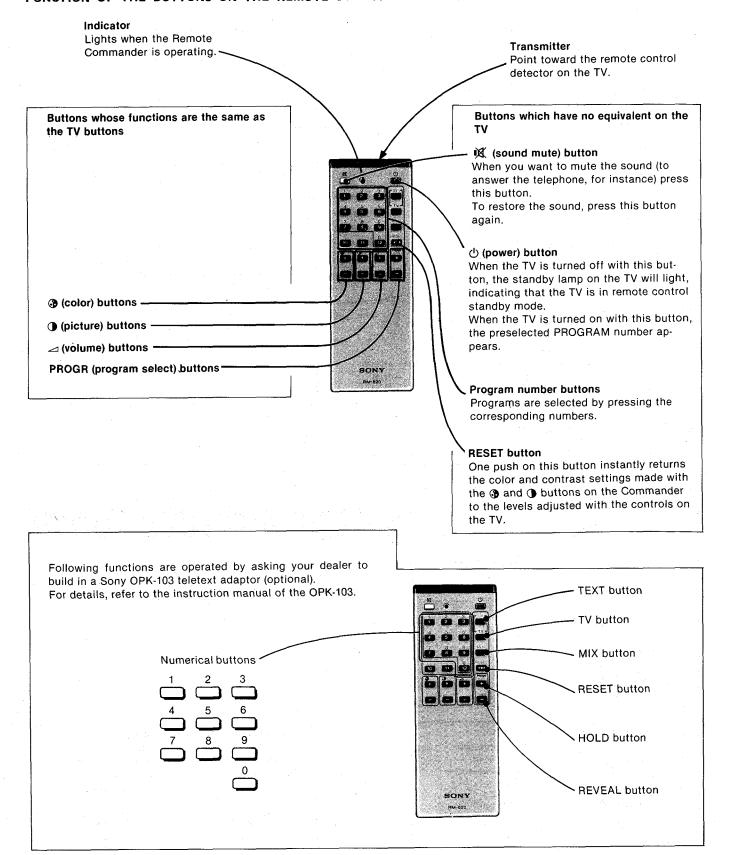
1-4. PICTURE ADJUSTMENTS

This TV always turns on with the factory-preset constant color and contrast levels. If necessary, make the following adjustments:

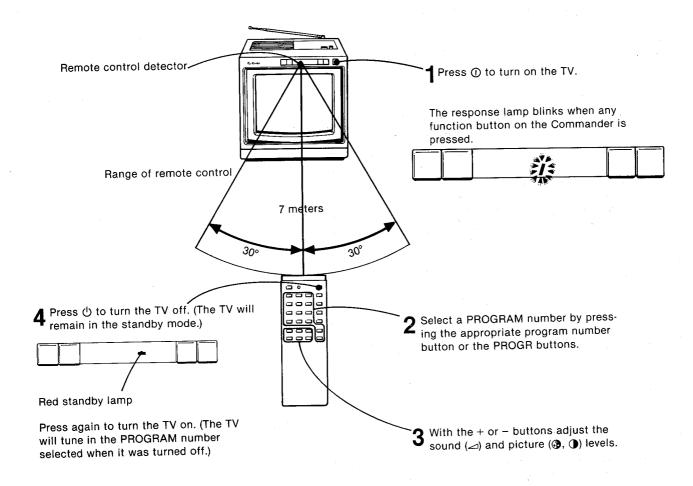


1-5. REMOTE CONTROL OPERATION

FUNCTION OF THE BUTTONS ON THE REMOTE COMMANDER RM-620



OPERATION WITH THE REMOTE COMMANDER

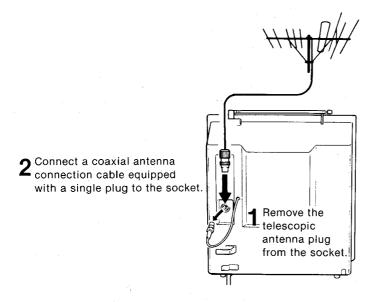


Notes on the Remote Commander

- In normal use, battery life is up to half a year. When the batteries are exhausted, the Commander will not operate the TV properly. In this case, replace the batteries with new ones.
- When the Commander is not to be used for a long period of time, remove the batteries to avoid damage from possible battery leakage.
- Keep the Commander away from extremely hot or humid places.
- Avoid dropping any foreign objects into the Commander case, particularly when replacing batteries.
- The supplied RM-620 Commander may be used only with those Sony color TV models indicated in the operating instructions.
- If the TV is turned off with the Remote Commander (so the standby lamp lights up), the program, volume and picture settings will remain the same when the TV is turned on again.
- If the power supply is interrupted or the ac power cord is disconnected during operation, the TV will enter into the standby mode when the power is restored.

1-6. EXTERNAL ANTENNA CONNECTION

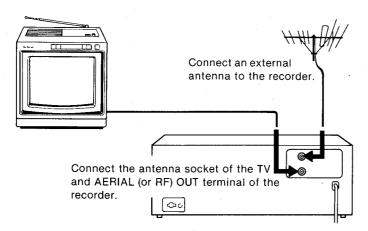
The built-in telescopic antenna will provide good reception in most reception areas. If you cannot obtain satisfactory reception with it, the use of an outdoor antenna is recommended.



Your Sony dealer will be pleased to advise you which type of antenna is best suited to your location.

1-7. VTR CONNECTION

When a video cassette recorder is connected to the TV, you can view the playback of a recorded tape or a TV program.

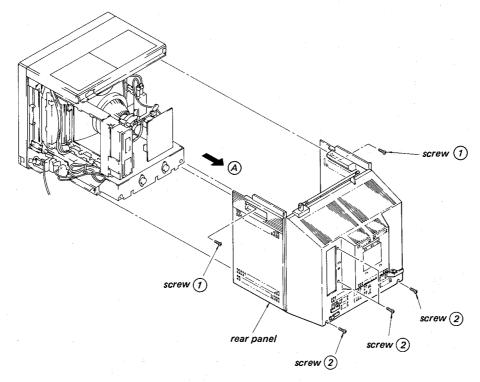


For details, refer to the operating instructions furnished with the recorder.

SECTION 2 DISASSEMBLY

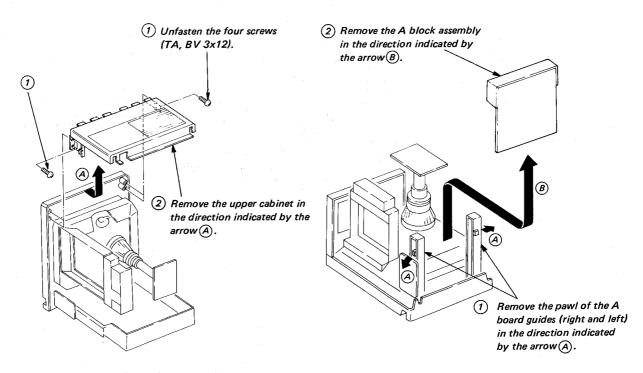
2-1. REAR PANEL REMOVING

- 1. Remove the two screws 1.
- 2. Remove the four screws 2).
- 3. Remove the rear panel in the direction indicated by the arrow (A).

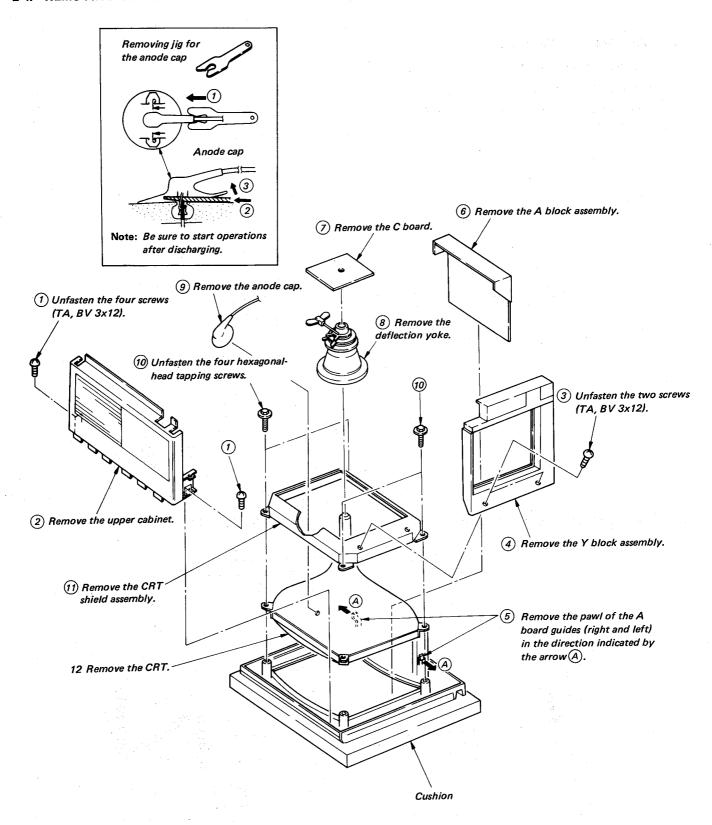


2-2. REMOVING THE UPPER CABINET

2-3. A BLOCK ASSEMBLY REMOVAL



2-4. REMOVING THE CRT

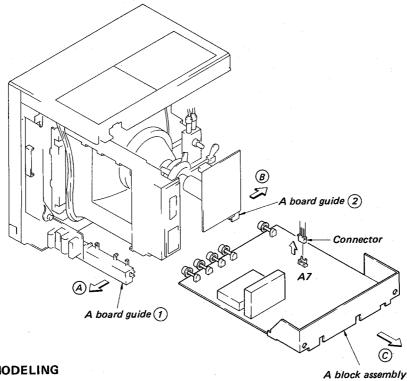


2-5. OPK-102 ATTACHING

1. REAR PANEL REMOVAL (See 2-1 on page 11.)

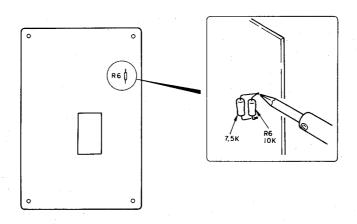
2. A BLOCK ASSEMBLY DISASSEMBLING

- Remove the hooks of the A board guides 1 and 2 and pull the guides in the direction indicated by the arrows A and B.
- 2. Pull out the A block assembly in the direction indicated by the arrow ©.
- 3. Pull up the A7-side connector on the A board in the direction indicated by the arrow.



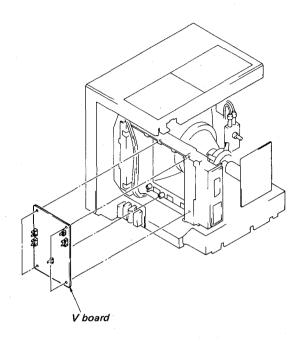
3. SCM BOARD REMODELING

• Connect 7.5 k Ω in parallel to the R6/10 k Ω as shown in the figure.



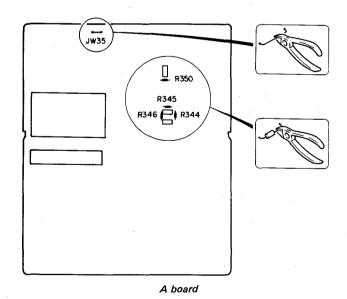
4. SCM BOARD (OPK-102) MOUNTING

1. Fix the remodeled SCM board as shown in the figure.



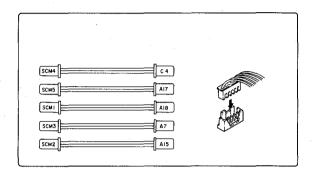
5. A BOARD REMODELING

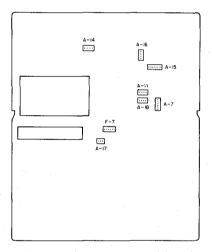
- 1. Cut off R344, R345 and R346/3.3 k Ω using a nipper as shown in the figure.
- 2. Cut off R350/100 Ω using a nipper as shown in the figure.
- 3. Cut off the jumper wire (JW-35) using a nipper as shown in the figure.



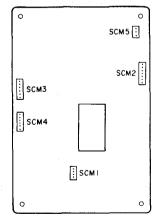
6. CONNECTOR CONNECTION

 Connect the other end of the harness connected to the SCM board to each connector on the A and C boards, respectively, as shown in the figure below. (Refer to the connector arrangement on the A and SCM boards.)





Connector arrangement on A board



Connector arrangement on SCM board

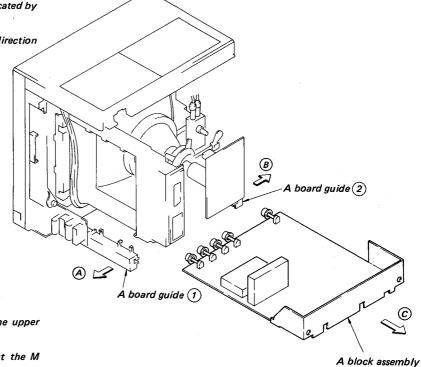
2-6. OPK-103 ATTACHING

1. REAR PANEL REMOVING (See 2-1 on page 11.)

2. A BLOCK ASSEMBLY DISASSEMBLING

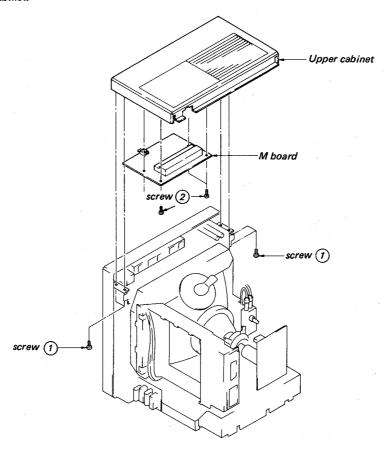
Remove the hooks of the A board guides 1 and 2 and pull the guides in the direction indicated by the arrows A and B.

2. Pull out the A block assembly in the direction indicated by the arrow ©.



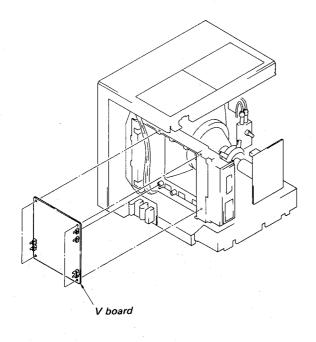
B. M BOARD DISMOUNTING

- Remove the four screws (1) to detach the upper cabinet.
- 2. Remove the four screws 2 to dismount the M board from the upper cabinet.



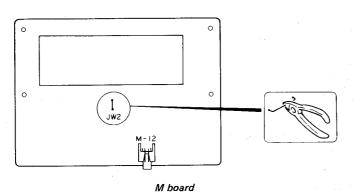
4. V BOARD (OPK-103) MOUNTING

1. Fix the V board as shown in the figure.



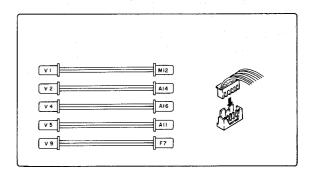
5. M BOARD REMODELING

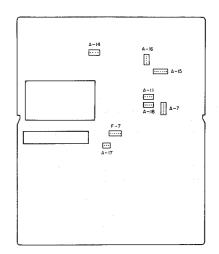
 Cut off the jumper wire (JW-2) using a nipper as shown in figure.



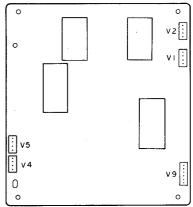
6. CONNECTOR CONNECTION

 Connect the other end of the harness connected to the V board to each connector on the A board as shown in the figure below. (Refer to the connector arrangement on the A and V boards.)





Connector arrangement on A board

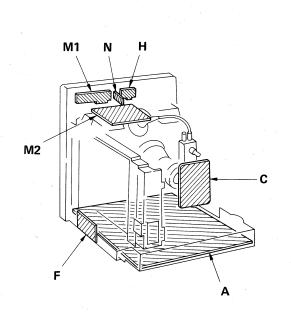


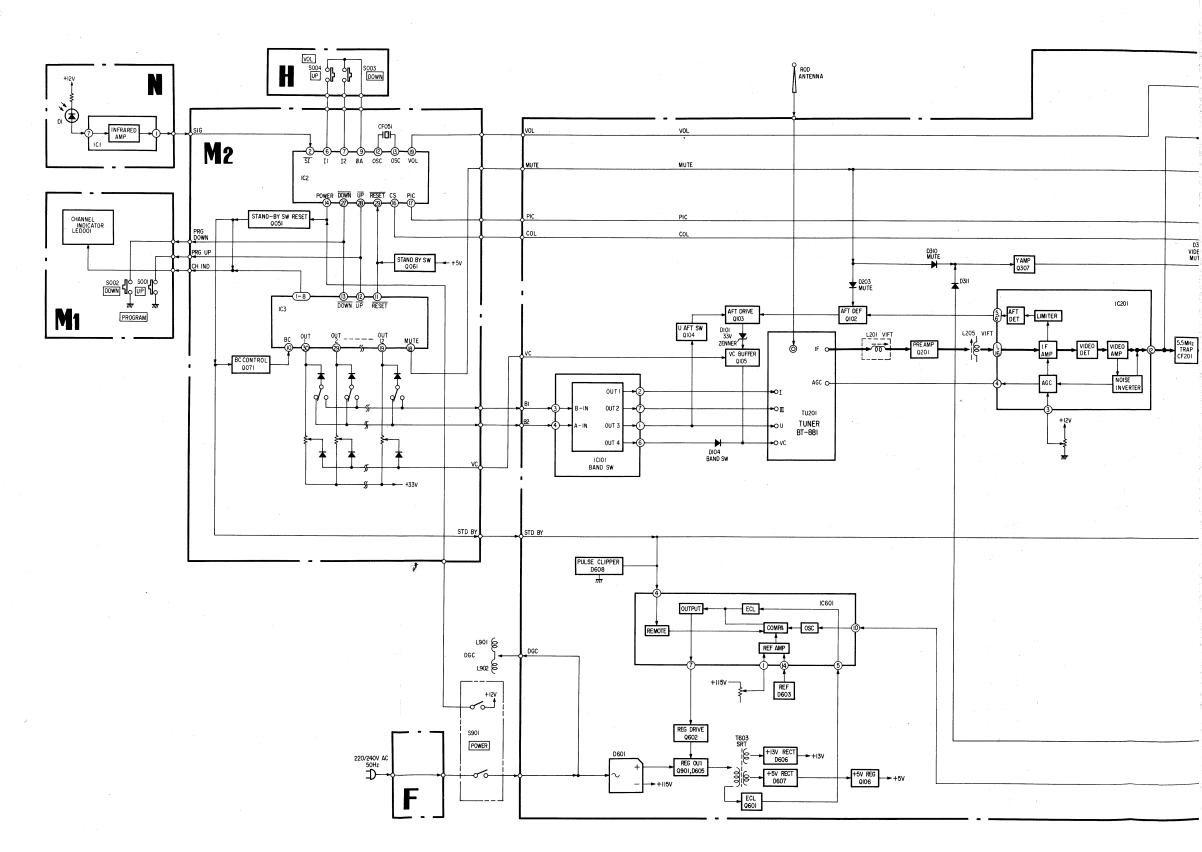
Connector arrangement on V board

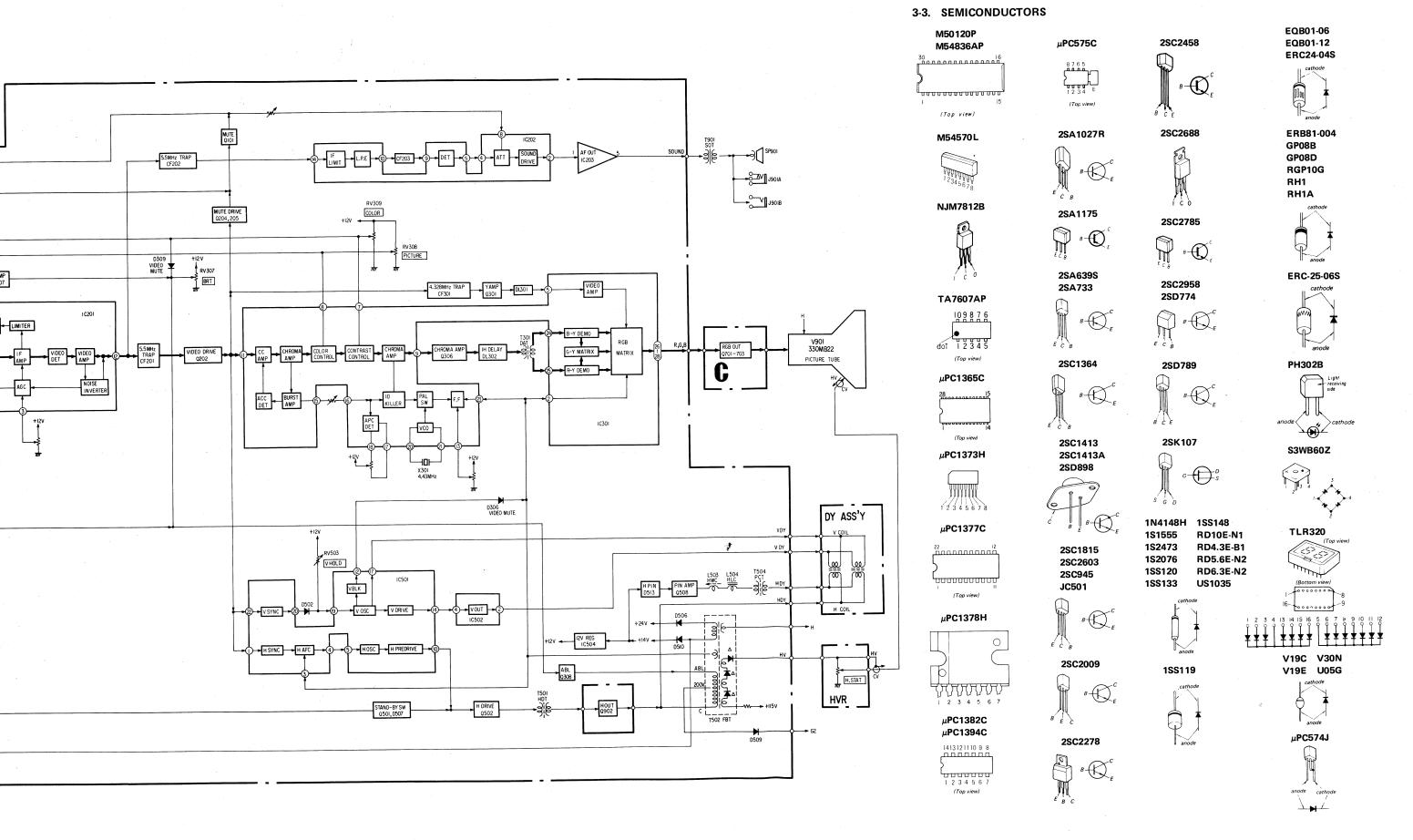
SECTION 3 DIAGRAMS

3-1. CIRCUIT BOARDS LOCATION

3-2. BLOCK DIAGRAM





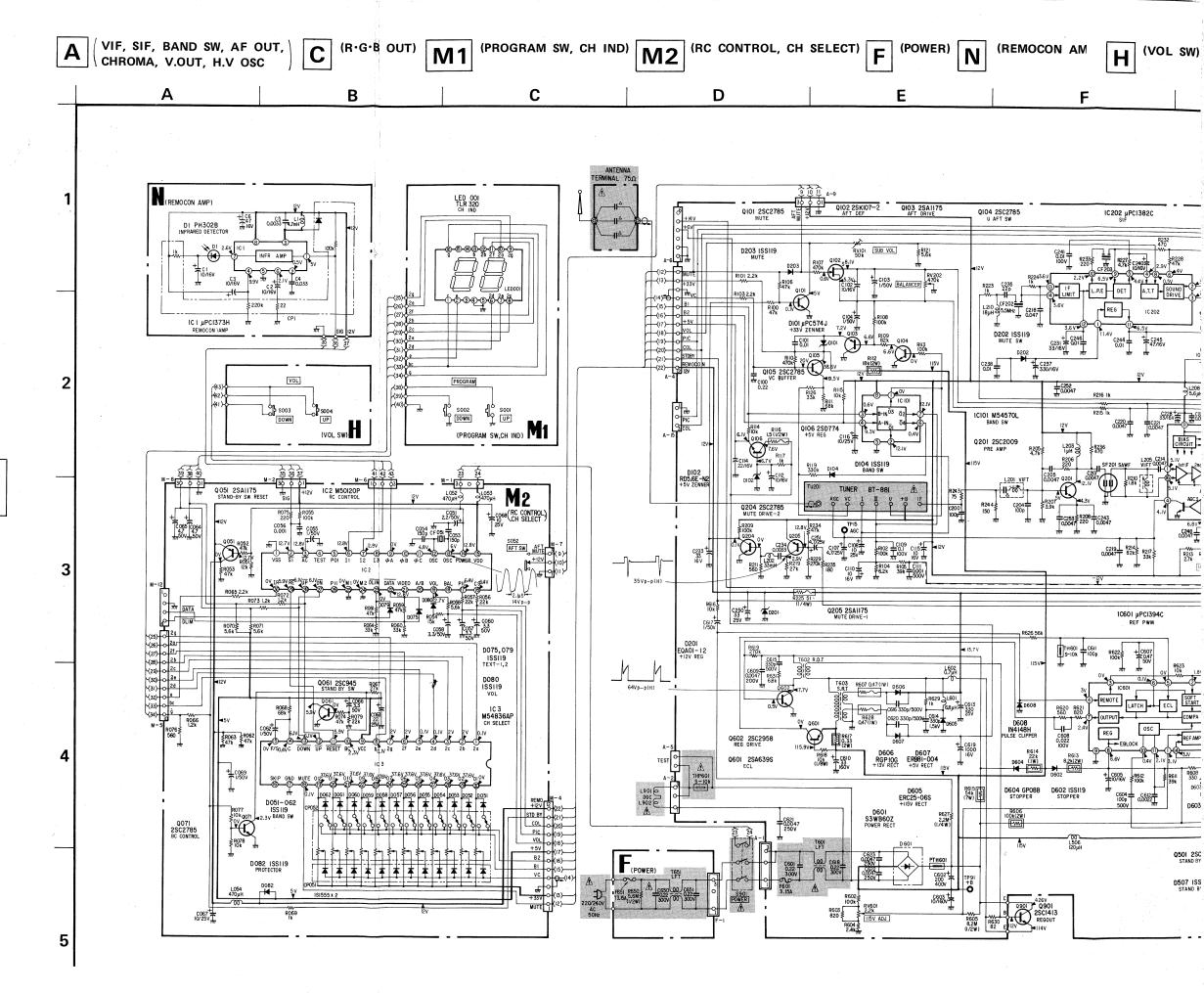


3-4. SCHEMATIC DIAGRAM

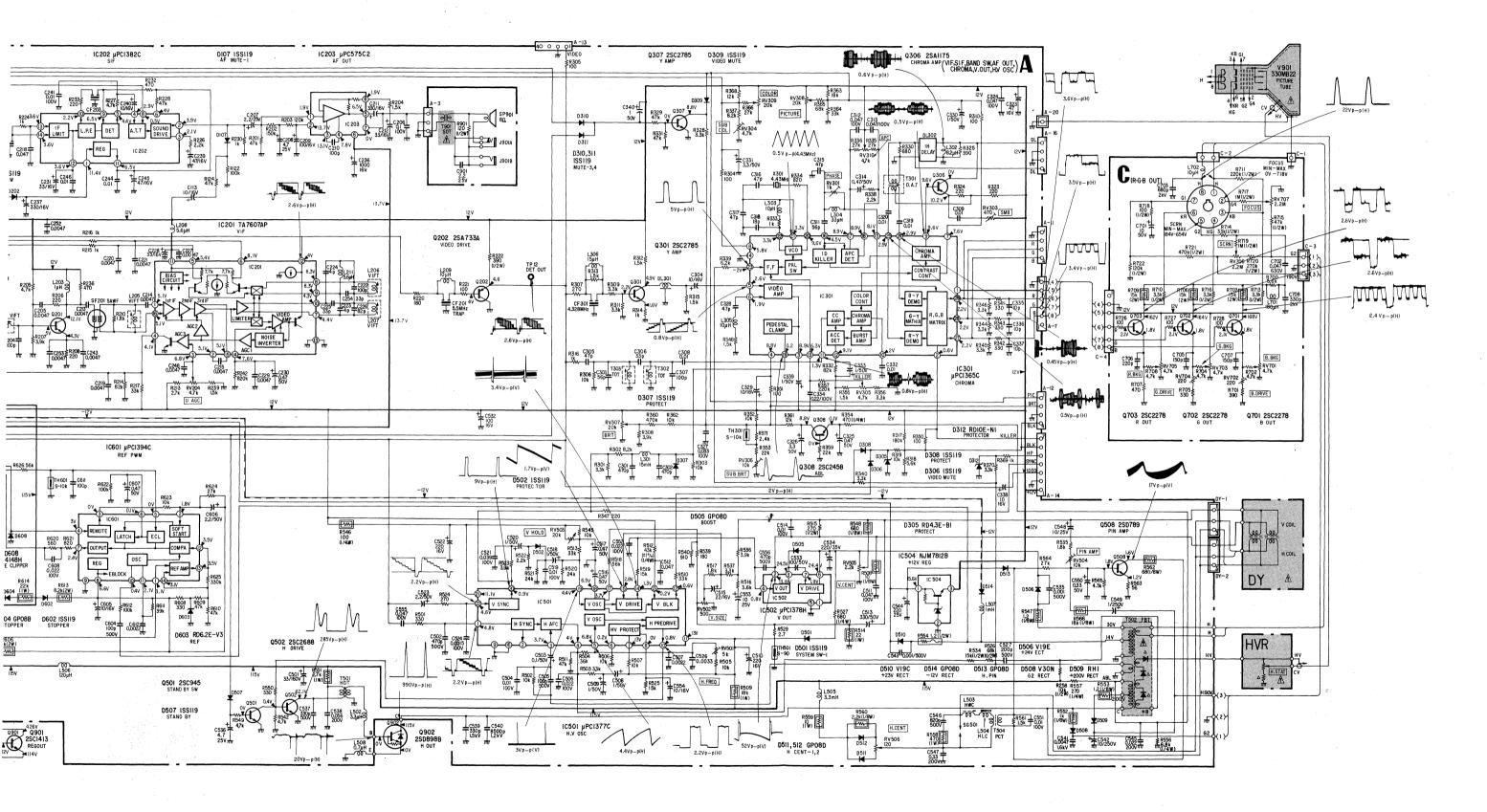
Note:

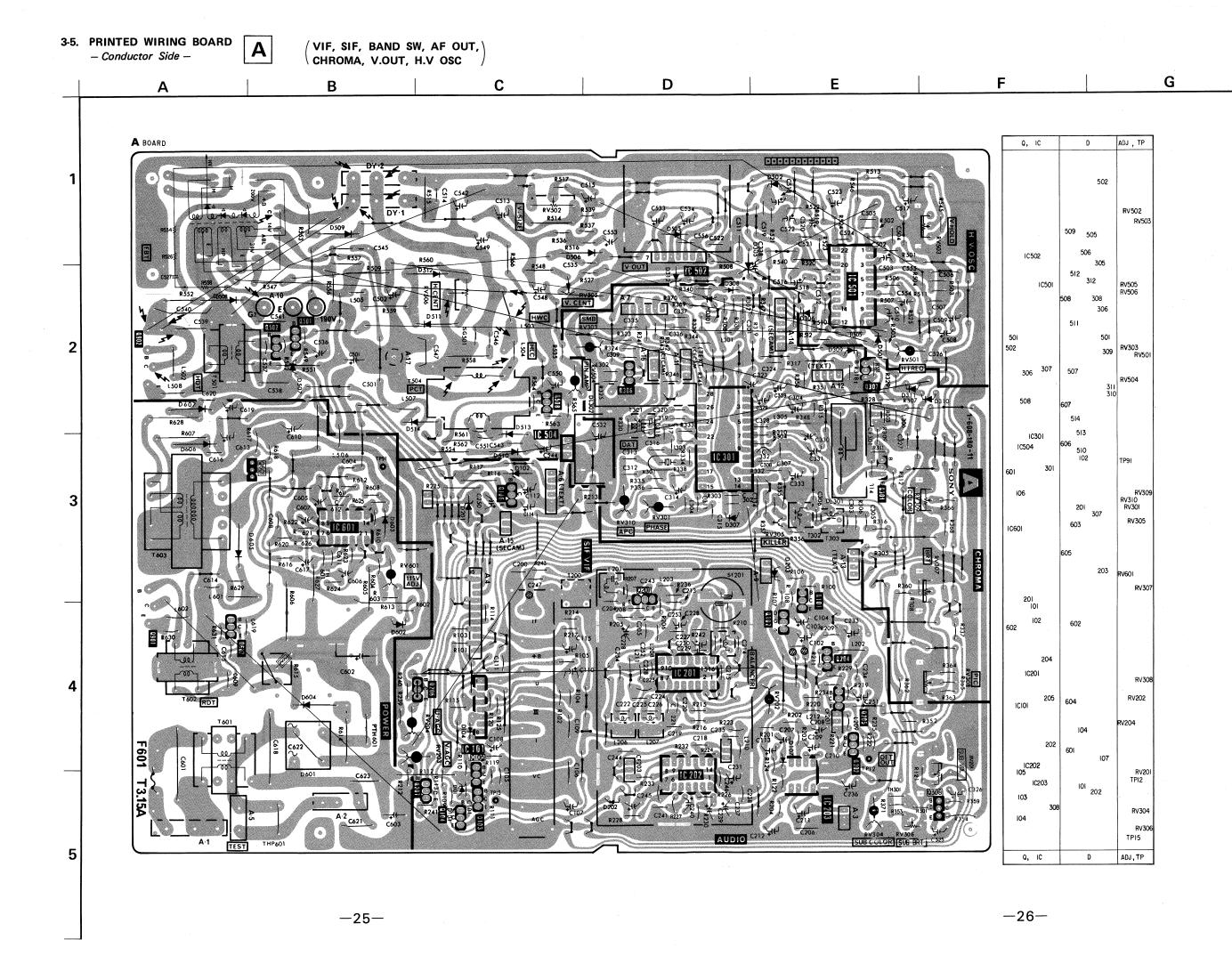
- All capacitors are in μF unless otherwise noted, pF: $\mu \mu F$ 50WV or less are not indicated except for electrolytics.
- All resistors are in ohms, 1/6W unless otherwise noted. $k\Omega=1000\Omega, M\Omega=1000k\Omega$
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- : nonflammable resistor.
- tusible resistor.
- △ : internal component.
- : panel designation.
- All voltages are in V.
- Voltages are dc with respect to ground unless otherwise noted.
- $\bullet~$ Readings are taken with a 10 $M\Omega$ digital multimeter.
- Voltage variations may be noted due to normal production tolerances.
- Readings are taken with a color-bar signal input.
- adjustment for repair.
- PAL color-bar signal received.
- ----: B + bus
- ----: B − bus

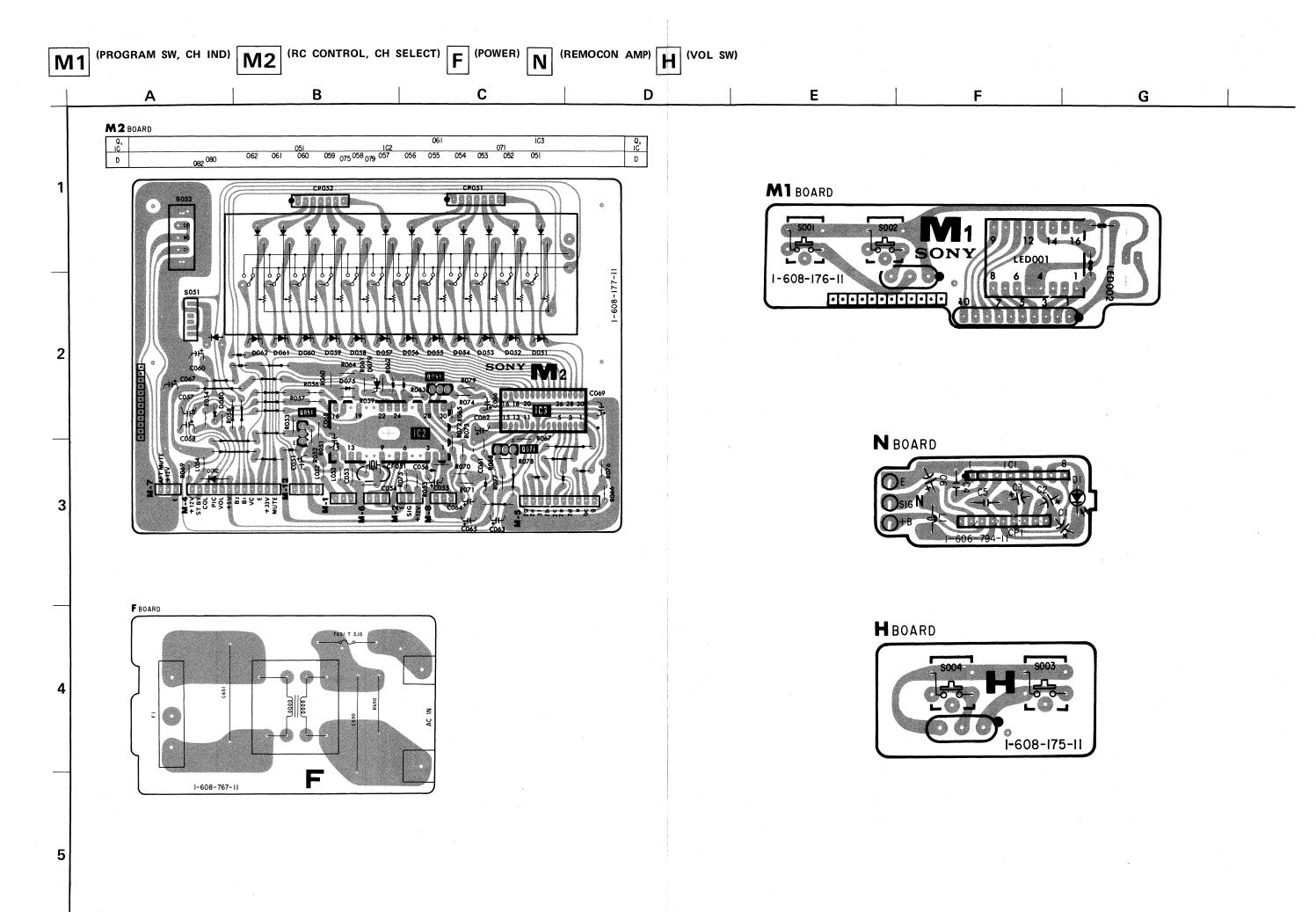
The components identified by shading and A mark are critical for safety. Replace only with part number specified.



F G H I J K L M







Α

B (

С

D

-29-

1

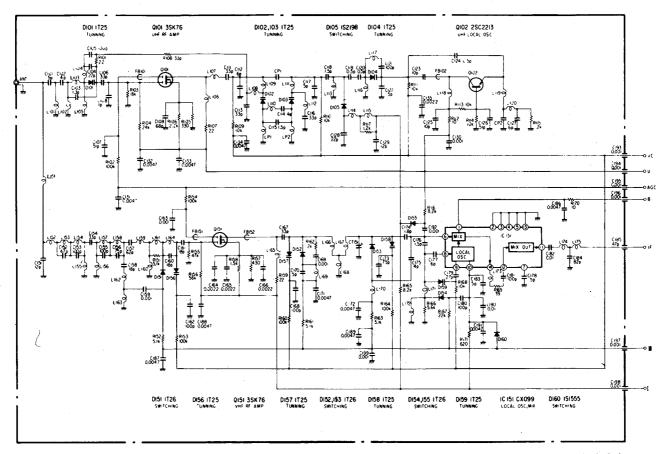
2

3

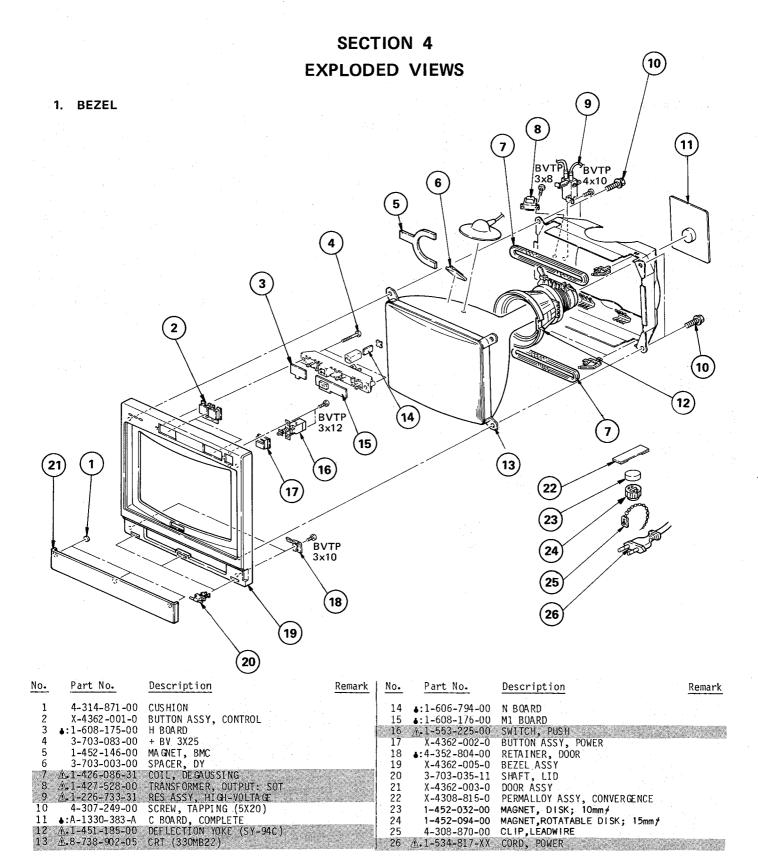
4

5

3-6. TUNER SCHEMATIC DIAGRAM BT-881



Note: Tuner reference numbers are not included in the Electrical Parts List.



NOTE:

▲: A-1330-383-A

12 A.1-451-185-00 13 A.8-738-902-05

8

10

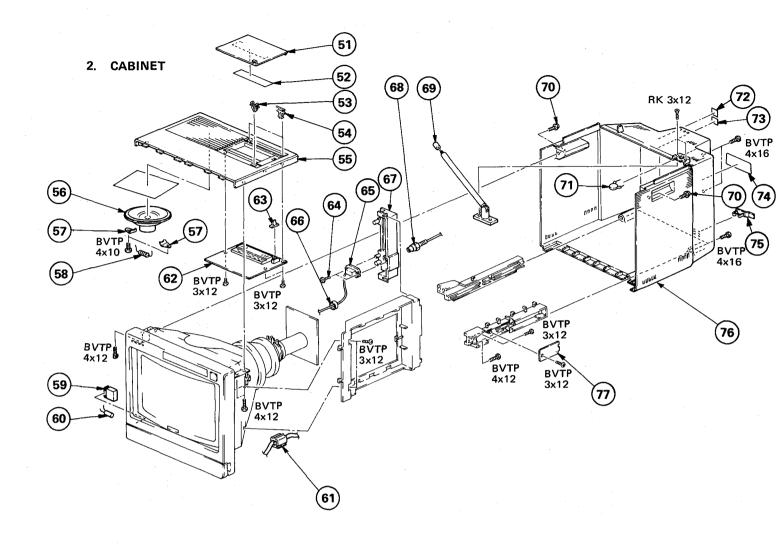
11

- Items with no part number and no des-cription are not stocked because they are seldom required for routine service.
- The construction parts of an assembled part are indicated with a collation number in the remark column.

21

The components identified by shading and mark A are critical for safety.
Replace only with part number specified.

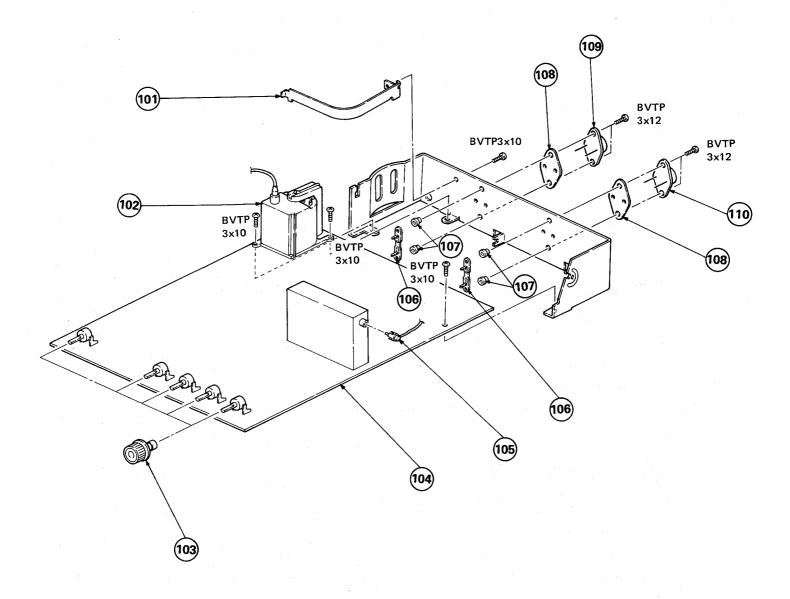
22 X-4308-815-0 PERMALLOY ASSY, CONVERGENCE
23 1-452-032-00 MAGNET, DISK; 10mm /
24 1-452-094-00 MAGNET, ROTATABLE DISK; 15mm /
25 4-308-870-00 CLIP, LEADWIRE
26 Δ.1-534-817-XX CORD, POWER



No.	Part No.	Description	Remark	No-	Part No.	Description	Remark
51	X-4362-008-1	DOOR ASSY, PRESET		65	∆ 1-536-683-00	CONNECTOR, COAXIAL ANTE	NNA
52	4:4-330-108-00	LABEL, INSTRUCTION, PRESET		66	1-543-171-00	CORE, RING	
53	3-703-574-00	RETAINER, DOOR		67	4-362-011-00	PANEL, CONNECTOR	
54	3-703-035-11	SHAFT, LID		68	1-556-054-00	ANT PLUG ASSY	
55	X-4362-004-0	PLATE ASSY, TOP		69	1-501-152-00	ROD ANTENNA, TYPE B	
56	1-502-893-00	SPEAKER		70	3-701-810-81	SCREW, TERMINAL	
57	▲:4-338-106-00	HOLDER, SPEAKER		71	1-161-491-00	CAP, CERAMIC 470PF	
58		RES, CARBON 120.00 (1/2W)		72	4-310-380-00	LABÉL, DEMKO	
59	1-507-539-11			73	4-310-381-00	LABEL, SEMKO	
60	1-121-705-00	CAP, ELECT (NONPOLAR) 2.2MF		74	a : 4-362-041-01	LABEL, MODEL NUMBER	
61		HOLDER. AC CORD		75	4-329-127-00	CLAMP, CORD	
62		M2 BOARD, COMPLETE		76	X-4362-006-0	CABINET ASSY	
63	4-362-005-00			77	1-608-767-00	F BOARD	
64	4-304-496-00	HEAD, WASHER, TAPPING SCREW		(

The components identified by shading and mark A are critical for safety.
Replace only with part number specified.

3. CHASSIS



No.	Part No.	Description Remark	No.	Part No.	Description	Remark
101 102 103 104 105	X-4329-105-0	RING, SHORT, FBT TRANSFORMER ASSY, FLYBACK: FBT KNOB CONTROL (B) ASSY A BOARD, COMPLETE CABLE, PIN	106 107 108 109 110	\$:4-350-806-00 3-703-320-00 3-701-353-00 8-729-398-09 8-729-341-34	BRACKET, TRANSISTOR BUSHING (A), TRANSISTOR SPACER, MICA TRANSISTOR 2SD898B TRANSISTOR 2SC1413A	
					The components identified by shading and mark <u>A</u> are critical for safety.	

The components identified by shading and mark A are critical for safety.

Replace only with part number specified.



5 ELECTRICAL PARTS LIST

NOTE:

The components identified by shading and mark A are critical for safety. Replace only with part number specified.

- =>: Due to standardization, interchangeable replacements may be substituted for parts specified in the diagrams.
- Items marked " " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- CAPACITORS MF : μ F, PF : $\mu\mu$ F

RESISTORS

COILS

F

• All resistors are in ohms

• MMH : mH, UH : μH

• F : nonflammable

Ref.	No.Part No.	Descriptio	<u>n</u>		Remark	Ref.No	Part No.	Description			Remark
0.650		F BOARD *******				C104 C107 C108 C109 C110	1-123-380-00 1-123-328-00 1-123-620-00 1-108-389-00 1-123-356-00	ELECT ELECT	1MF 4.7MF 10MF 0.1MF 10MF	20% 20% 20% 10% 20%	50V 25V 25V 100V 16V
	↑ 1-108-745-00 ↑ 1-108-745-00 CON • 1-506-348-XX	MYLAR NECTOR	0.22MF 0.22MF	20%	300V 300V	C111 C112 C113 C114 C115	1-102-038-00 1-123-356-00 1-123-356-00 1-123-622-00 1-123-356-00	CERAMIC ELECT ELECT ELECT ELECT	0.001MF 10MF 10MF 22MF 10MF	20% 20% 20% 20%	500V 16V 16V 16V 16V
F 651	FUS A.1-532-237-00 a:1-533-087-00	— FUSE, TIME	-LAG T3.15A SE, F651			C116 C200 C204 C205 C206	1-123-620-00 1-102-529-00 1-102-529-00 1-102-125-00 1-108-389-00	ELECT CERAMIC CERAMIC CERAMIC MYLAR	10MF 100PF 100PF 0.0047MF 0.1MF	20% 5% 5% 10% 10%	25V 50V 50V 50V 100V
	<u> </u>	COMPOSITION	and the second of the second o	ik a da ank a a 1996 hai 1994 war was 1996 ka ara da al da da da da da a da a da a d		C207 C208 C209 C210 C211	1-121-705-00 1-123-328-00 1-123-333-00 1-102-973-00 1-123-322-00	ELECT	2.2MF 4.7MF 100MF 100PF 330MF	30% 20% 20% 5% 20%	25V 25V 16V 50V 16V
	**************************************	******	**************	**************************************	*****	C212 C213 C214 C215 C218	1-123-820-00 1-102-125-00 1-102-125-00 1-102-125-00 1-101-006-00	ELECT CERAMIC CERAMIC CERAMIC CERAMIC	33MF 0.0047MF 0.0047MF 0.0047MF 0.047MF	20% 10% 10% 10%	16V 50V 50V 50V 50V
	6 : 4-362-027-00 6 : 4-362-028-00 6 : 1-508-796-21 6 : 1-551-611-00 6 : 1-556-408-41	CASE (UPPER PIN, CONNEC CONNECTOR A	R), SHIELD, Y	/IF 2P)		C219 C220 C221 C222 C223	1-102-125-00	CERAMIC CERAMIC CERAMIC CERAMIC CERAMIC	0.0047MF 0.0047MF 0.0047MF 100PF 4PF	10% 10% 10% 5% 0.25PF	50V 50V 50V 50V 50V
	a: 4-336-030-00	CASE (MAIN)), SHIELD, VI	F		C224 C225	1-102-937-00 1-102-518-00	CERAMIC CERAMIC	4PF 33PF	0.25PF	50V 50V
A1	<u>CON</u> • 1-506-348-XX	NECTOR 3P PLUG (L))			C226 C227 C228	1-102-518-00 1-102-527-00 1-102-125-00 1-123-820-00	CERAMIC CERAMIC ELECT	82PF 0.0047MF 33MF	5% 5% 10% 20%	50V 50V 50V 16V
A2 A3 A4 A5		PIN, CONNEC PLUG, CONNE 2P PLUG (M) PLUG, CONNE	TOR 3P CTOR (2.5MM)	PITCH) 6		C229 C230 C231 C233 C234	1-102-125-00 1-123-379-00 1-123-820-00 1-123-820-00 1-102-123-00	CERAMIC ELECT ELECT ELECT CERAMIC	0.0047MF 0.47MF 33MF 33MF 0.0033MF	10% 20% 20% 20% 10%	50V 50V 16V 16V 50V
A12	6:1-560-126-00 6:1-560-123-00 6:1-560-124-00 6:1-560-124-00	PLUG, CONNE PLUG, CONNE PLUG, CONNE	CTOR (2.5MM) 3P PITCH) 4I PITCH) 4I) 	C235 C236 C237 C238	1-102-959-00 1-123-324-00 1-123-322-00 1-102-129-00		22PF 1000MF 330MF 0.01MF	5% 20% 20% 10%	50V 16V 16V 50V
A13 A14 A15 A16	a :1-560-124-00 b :1-560-127-00 a :1-560-123-00 a :1-560-124-00	PLUG, CONNE PLUG, CONNE PLUG, CONNE	CTOR (2.5MM CTOR (2.5MM	PITCH) 71 PITCH) 31		C239 C240 C241 C243	1-123-821-00 1-123-356-00 1-108-377-00 1-102-125-00	ELECT ELECT MYLAR CERAMIC	47MF 10MF 0.01MF 0.0047MF	20% 20% 10% 10%	16V 16V 100V 50V
		ACITOR				C244 C245	1-102-129-00 1-123-821-00	CERAMIC ELECT	0.01MF 47MF	10% 20%	50V 16V
C100 C101 C102 C103	1-108-853-71 1-102-129-00 1-121-806-00 1-123-380-00	CERAMIC ELECT	0.22MF 0.01MF 10MF 1MF	10% 10% 20%	50V 50V 16V 50V	C246		CERAMIC CERAMIC	0.01MF 0.0047MF 33MF	10% 10% 20%	50V 50V 25V



Ref.No.Part	No.	Description			Remark	Ref.No	Part No.	Description			Remark
C252 1-103 C253 1-103 C254 1-103	3-328-00 2-125-00 2-125-00 2-518-00 2-125-00	ELECT CERAMIC CERAMIC CERAMIC CERAMIC	4.7MF 0.0047MF 0.0047MF 33PF 0.0047MF	20% 10% 10% 5% 10%	25V 50V 50V 50V 50V	C512 C513 C514 C515 C516	1-108-595-00 1-123-362-00 1-108-377-00 1-123-622-00 1-131-345-00	MYLAR ELECT MYLAR ELECT TANTALUM	0.047MF 330MF 0.01MF 22MF 0.47MF	5% 20% 10% 20% 10%	50V 50V 100V 16V 35V
C302 1-103 C303 1-103 C304 1-123	2-114-00 2-114-00 2-850-00 3-356-00 2-887-00	CERÁMIC CERAMIC CERAMIC ELECT CERAMIC	470PF 470PF 56PF 10MF 47PF	10% 10% 5% 20% 5%	50V 50V 50V 16V 50V	C517 C518 C519 C520 C521	1-123-379-00 1-123-380-00 1-108-377-00 1-123-380-00 1-108-384-00	ELECT ELECT MYLAR ELECT MYLAR	0.47MF 1MF 0.01MF 1MF 0.039MF	20% 20% 10% 20% 10%	50V 50V 100V 50V 100V
C307 1-102 C308 1-102 C309 1-102	2-884-00 2-678-00 2-129-00 2-129-00 2-850-00	CERAMIC CERAMIC CERAMIC CERAMIC CERAMIC	33PF 100PF 0.01MF 0.01MF 56PF	5% 5% 10% 10% 5%	50V 50V 50V 50V 50V	C522 C523 C524 C526 C527	1-123-321-00 1-123-381-00 1-108-367-00 1-129-794-00 1-102-244-00	ELECT ELECT MYLAR FILM CERAMIC	220MF 2.2MF 0.0015MF 0.0033MF 220PF	20% 20% 10% 2% 10%	16V 50V 100V 100V 500V
C313 1-108 C314 1-12 C315 1-108	8-385-00 8-385-00 3-379-00 2-887-00 2-852-00	MYLAR MYLAR ELECT CERAMIC CERAMIC	0.047MF 0.047MF 0.47MF 47PF 47PF	10% 10% 20% 5% 5%	100V 100V 50V 50V 50V	C532 C533 C534 C535 C536	1-123-333-00 1-123-360-00 1-123-346-00 1-102-038-00 1-123-328-00	ELECT ELECT ELECT CERAMIC ELECT	100MF 100MF 220MF 0.001MF 4.7MF	20% 20% 20% 20%	16V 50V 35V 500V 25V
C318 1-107 C319 1-107 C320 1-107	2-852-00 2-513-00 2-129-00 2-129-00 3-821-00	CERAMIC CERAMIC CERAMIC CERAMIC ELECT	47PF 18PF 0.01MF 0.01MF 47MF	5% 5% 10% 10% 20%	50V 50V 50V 50V 16V	C537 C538 C539 C540 C541	1-102-030-00 1-108-430-00 1-102-327-00 1-130-671-00 1-102-223-00	CERAMIC MYLAR CERAMIC FILM CERAMIC	330PF 0.056MF 330PF 0.0085MF 0.0047MF	10% 10% 15% 3% 20%	500V 200V 1.5KV 1.2KV 1.6KV
C325 1-123 C326 1-123 C327 1-108	8-385-00 3-379-00 3-382-00 8-383-00 1-880-00	MYLAR ELECT ELECT MYLAR CERAMIC	0.047MF 0.47MF 3.3MF 0.033MF 47PF	10% 20% 20% 10% 5%	100V 50V 50V 100V 50V	C542 C543 C544 C545 C546	1-123-005-00 1-102-038-00 1-123-334-00 1-108-425-00 1-102-212-00	ELECT CERAMIC ELECT MYLAR CERAMIC	22MF 0.001MF 220MF 0.022MF 820PF	20% 10% 10%	250V 500V 25V 200V 500V
C330 1-123 C331 1-123 C332 1-103	1-371-00 3-380-00 3-382-00 2-129-00 3-380-00	TANTALUM ELECT ELECT CERAMIC ELECT	10MF 1MF 3.3MF 0.01MF 1MF	20% 20% 20% 10% 20%	16V 50V 50V 50V 50V	C547 C548 C549 C550 C551	1-130-684-00 1-123-620-00 1-123-003-00 1-123-286-00 1-108-377-00	FILM ELECT ELECT ELECT MYLAR	0.33MF 10MF 1MF 0.33MF 0.01MF	5% 20% 20% 10%	200V 25V 250V 50V 100V
C335 1-107 C336 1-107 C337 1-107	8-393-00 2-947-00 2-947-00 2-947-00 3-356-00	MYLAR CERAMIC CERAMIC CERAMIC ELECT	0.22MF 10PF 10PF 10PF 10MF	10% 5% 5% 5% 20%	100V 50V 50V 50V 16V	C552 C553 C554 C555 C556	1-108-381-00 1-123-620-00 1-123-356-00 1-108-385-00 1-102-228-00	MYLAR ELECT ELECT MYLAR CERAMIC	0.022MF 10MF 10MF 0.047MF 470PF	10% 20% 20% 10% 10%	100V 25V 16V 100V 500V
C340 1-123 C501 1-123 C502 1-103	3-380-00 3-380-00 3-024-00 2-228-00 3-607-00	ELECT ELECT ELECT CERAMIC ELECT	1MF 1MF 33MF 470PF 0.1MF	20% 20% 10% 20%	50V 50V 160V 500V 50V	C601 Z C602 C603 C604 C605	1-108-745-00 1-125-318-00 1-121-999-00 1-101-810-00 1-123-356-00	MYLAR ELECT (BLOCK) ELECT CERAMIC ELECT	0.22MF 220MF 10MF 100PF 10MF	20% 20% 5% 20%	300V 400V 160V 500V 16V
C505 1-103 C506 1-108 C507 1-108	8-377-00 1-810-00 8-381-00 8-563-00 3-380-00	MYLAR CERAMIC MYLAR MYLAR ELECT	0.01MF 100PF 0.022MF 0.0022MF	10% 5% 10% 5% 20%	100V 500V 100V 50V 50V	C606 C607 C608 C609 C610	1-123-381-00 1-123-381-00 1-108-381-00 1-108-417-00 1-123-024-00	ELECT ELECT MYLAR MYLAR ELECT	2.2MF 2.2MF 0.022MF 0.0047MF 33MF	20% 20% 10% 10%	50V 50V 100V 200V 160V
C510 1-123	3-380-00 3-321-00 8-385-00	ELECT ELECT MYLAR	1MF 220MF 0.047MF	20% 20% 10%	50V 16V 100V	C611 C612 C613	1-102-973-00 1-108-563-00 1-123-335-00	CERAMIC MYLAR ELECT	100PF 0.0022MF 330MF	5% 5% 20%	50V 50V 25V

The components identified by shading and mark A are critical for safety. Replace only with part number specified.



Ref.No.Part No.	Description		Rémark	Ref.No.Part No. Description Remark
C614 1-102-327-00 C615 1-102-030-00 C616 1-102-030-00 C617 1-123-021-00 C618 A 1-108-745-00	CERAMIC 330PF CERAMIC 330PF ELECT 0.47MF	15% 10% 10% 30%	1.5KV 500V 500V 50V 300V	DELAY LINE DL301 1-415-274-00 DELAY LINE, Y DL302 1-415-122-31 DELAY LINE CONNECTOR
C619 1-123-324-00 C620 1-102-030-00 C621 1-161-964-00 C622 1-161-964-00 C623 1-161-964-00	CERAMIC 330PF CERAMIC 0.0047MF CERAMIC 0.0047MF	20% 10%	16V 500V 250V 250V 250V	DY1 • 1-506-348-XX 3P PLUG (L) DY2 • 1-506-348-XX 3P PLUG (L) FUSE
FII	TER			F601 A.1-532-237-00 FUSE, TIME-LAG 3.15A 4:1-533-087-00 HOLDER, FUSE, F601
CF201 1-404-134-00 CF202 1-527-263-00 CF203 1-404-320-00 CF301 1-409-338-00		<u>7</u>)		IC IC101 8-759-600-15 IC M54570L IC201 8-759-276-07 IC TA7607AP
DIC	<u>DDE</u>			IC202 8-759-113-82 IC UPC1382C IC203=>8-759-157-52 IC UPC575C
D101 8-759-157-40 D102 8-719-102-71 D104 8-719-911-19 D107 8-719-911-19 D201 =>8-719-930-12	DIODE RD5.6E-N2 DIODE 1SS119 DIODE 1SS119			IC301 8-759-113-65 IC UPC1365C IC501 8-759-100-60 IC UPC1377C IC502⇒8-759-113-78 UPC1378H-L IC504 8-759-700-06 IC NJM7812B 4:4-323-833-00 HEAT SINK, PIN OUT, IC504
D202 8-719-911-19 D203 8-719-911-19 D305 8-719-100-22 D306 8-719-911-19 D307 8-719-911-19	DIODE 1SS119 DIODE RD4.3E-B1 DIODE 1SS119			IC601 8-759-100-75 IC UPC1394C COIL L201 1-404-431-00 VIFT
D308 8-719-911-19 D309 8-719-911-19 D310 8-719-911-19 D311 8-719-911-19 D312 8-719-102-89	DIODE 1SS119 DIODE 1SS119 DIODE 1SS119 DIODE 1SS119			L202 1-408-247-00 MICRO INDUCTOR 33MMH L203 1-408-397-00 MICRO INDUCTOR 1UH L205 1-404-428-00 VIFT L206 1-404-427-00 VIFT
D513 8-719-911-19 D501 8-719-911-19 D502 8-719-911-19 D505 ->> 710-011-15	DIODE 1SS119 DIODE 1SS119			L208 1-408-406-00 MICRO INDUCTOR 5.5UH L209 1-408-409-00 MICRO INDUCTOR 10UH L210 1-408-412-00 MICRO INDUCTOR 18UH L211 1-408-406-00 MICRO INDUCTOR 5.6UH
D505 =>8-719-911-55 D506 8-719-901-93 D507 8-719-911-19 D508 8-719-903-09	DIODE V19E DIODE 1SS119			L301 1-407-506-00 MICRO INDUCTOR 15MMH L302 1-408-408-00 MICRO INDUCTOR 8.2UH L303 1-408-409-00 MICRO INDUCTOR 10UH L304 1-408-415-00 MICRO INDUCTOR 33UH
D509 =>8-719-300-76 D510 =>8-719-901-93 D511 =>8-719-911-55 D512 =>8-719-911-55	DIODE RHIA DIODE V19E DIODE U05G DIODE U05G			L305 1-408-409-00 MICRO INDUCTOR 10UH L306 1-408-411-00 MICRO INDUCTOR 15UH L502 1-408-225-00 MICRO INDUCTOR 3.3UH
D513 =>8-719-911-55 D514 =>8-719-911-55 D601 8-719-503-06	DIODE UO5G DIODE UO5G DIODE S3WB6OZ			L503 1-459-292-00 COIL, FERRITE (HWC) L504 1-459-295-00 COIL, FERRITE (HLC) L505 1-407-498-00 MICRO INDUCTOR 3.3MMH
D602 8-719-911-19 D603 8-719-102-74	DIODE RD6,2E-N2			L506
0604 =>8-719-911-55 0605 8-719-925-06 0606 =>8-719-901-93 0607 8-719-982-04 0608 =>8-719-911-19	DIODE ERC25-06S DIODE V19E DIODE ERB81-004			L601 1-408-300-00 MICRO INDUCTOR 6.8UH L602 1-407-365-00 COIL, CHOKE (HIGH FREQUENCY) 0.7UH

The components identified by shading and mark A are critical for safety. Replace only with part number specified.



Ref.No.Part No.	Description	•	Remark	Ref.N	o.Part No.	Description			Remark
PTH601 1-800-820-00	RMISTOR THERMISTOR, POWER NSISTOR			R205 R206 R207 R208 R209	1-247-847-00 1-247-815-00 1-247-845-00 1-247-815-00 1-247-879-00	CARBON CARBON CARBON CARBON CARBON	4.7K 5% 220 5% 3.9K 5% 220 5% 100K 5%	1/6W 1/6W 1/6W 1/6W 1/6W	
Q101 8-729-178-54 Q102 8-769-200-20 Q103 8-729-117-54 Q104 8-729-178-54 Q105 8-729-178-54	TRANSISTOR 2SC2785 TRANSISTOR 2SK107- TRANSISTOR 2SA1175 TRANSISTOR 2SC2785 TRANSISTOR 2SC2785	2		R210 R211 R213 R214 R215	1-247-837-00 1-247-825-00 1-247-841-00 1-247-877-00 1-247-831-00	CARBON CARBON CARBON CARBON CARBON	1.8K 5% 560 5% 2.7K 5% 82K 5% 1K 5%	1/6W 1/6W 1/6W 1/6W 1/6W	
Q106 8-729-177-43 Q201 8-765-300-00 Q202 =>8-729-612-77 Q204 8-729-178-54 Q205 8-729-117-54	TRANSISTOR 2SD774 TRANSISTOR 2SC2009 TRANSISTOR 2SA1027F TRANSISTOR 2SC2785 TRANSISTOR 2SA1175	?		R216 R217 R219 R220 R221	1-247-831-00 1-247-867-00 1-247-865-00 1-247-813-00 1-247-807-00	CARBON CARBON CARBON CARBON CARBON	1K 5% 33K 5% 27K 5% 180 5% 100 5%	1/6W 1/6W 1/6W 1/6W 1/6W	
Q301 8-72 9-178-54 Q306 8-72 9-117-54 Q307 8-72 9-178-54 Q308 8-72 9-245-83 Q501 =>8-72 9-663-47	TRANSISTOR 2SC2785 TRANSISTOR 2SA1175 TRANSISTOR 2SC2785 TRANSISTOR 2SC2458 TRANSISTOR 2SC1364			R222 R223 R224 R225 R226	1-244-863-51 1-247-831-00 1-247-831-00 1-212-874-00 1-247-839-00	CARBON CARBON CARBON FUSIBLE CARBON	390 5% 1K 5% 1K 5% 51 5% 2.2K 5%	1/2W 1/6W 1/6W 1/4W 1/6W	F :
Q502 8-72 9-168-82 Q508 =>8-72 9-177-43 Q601 8-72 9-163-93 Q602 8-72 9-195-82	TRANSISTOR 2SC2688 TRANSISTOR 2SD774 TRANSISTOR 2SA639S TRANSISTOR 2SC2958			R227 R228 R229 R230 R232	1-247-847-00 1-247-871-00 1-247-889-00 1-247-831-00 1-247-823-00	CARBON CARBON CARBON CARBON CARBON	4.7K 5% 47K 5% 270K 5% 1K 5% 470 5%	1/6W 1/6W 1/6W 1/6W 1/6W	
RES	SISTOR			R233	1-247-815-00	CARBON	220 5%	1/6W	
R100 1-247-871-00 R101 1-247-839-00 R102 1-247-879-00 R103 1-247-839-00 R104 1-247-850-00	CARBON 47K CARBON 2.2K CARBON 100K CARBON 2.2K CARBON 6.2K	5% 1/6k 5% 1/6k 5% 1/6k 5% 1/6k 5% 1/6k	 	R234 R235 R236 R239	1-247-871-00 1-247-813-00 1-247-823-00 1-247-835-00	CARBON CARBON CARBON CARBON	47K 5% 180 5% 470 5% 1.5K 5%	1/6W 1/6W 1/6W 1/6W	
R105 1-247-869-00 R106 1-247-871-00 R107 1-247-895-00 R108 1-247-879-00	CARBON 39K CARBON 47K	5% 1/6W 5% 1/6W 5% 1/6W 5% 1/6W 5% 1/6W	! ! !	R242 R243 R244 R301 R302	1-247-901-00 1-247-804-00 1-247-811-00 1-247-843-00 1-247-853-00	CARBON CARBON CARBON CARBON CARBON CARBON	82 OK 5% 75 5% 150 5% 3.3K 5% 8.2K 5%	1/6W 1/6W 1/6W 1/6W 1/6W	
R109 1-247-877-00 R110 1-247-895-00 R111 1-247-875-00 R112 1-206-694-00 R113 1-247-879-00 R114 1-247-855-00	CARBON 470K	5% 1/6W 5% 1/6W 5% 2W 5% 1/6W 5% 1/6W	I F	R303 R304 R305 R306 R307	1-247-855-00 1-247-807-00 1-247-807-00 1-247-855-00 1-247-817-00	CARBON CARBON CARBON CARBON CARBON	10K 5% 100 5% 100 5% 10K 5% 270 5%	1/6W 1/6W 1/6W 1/6W 1/6W	
R115 1-247-855-00 R116 1-212-938-00 R117 1-247-831-00 R119 1-247-891-00 R121 1-247-849-00		5% 1/6V 5% 1/2V 5% 1/6V 5% 1/6V	 F 	R308 R309 R310 R311 R312	1-247-845-00 1-247-843-00 1-247-807-00 1-247-843-00 1-247-835-00	CARBON CARBON CARBON CARBON CARBON	3.9K 5% 3.3K 5% 100 5% 3.3K 5% 1.5K 5%	1/6W 1/6W 1/6W 1/6W 1/6W	
R122 1-247-879-00 R124 1-247-871-00 R126 1-247-867-00 R201 1-247-871-00 R202 1-247-883-00	CARBON 100K CARBON 47K CARBON 33K CARBON 47K	5% 1/6W 5% 1/6W 5% 1/6W 5% 1/6W	l 	R313 R314 R315 R316 R317	1-247-835-00 1-247-831-00 1-247-835-00 1-247-831-00 1-247-885-00	CARBON CARBON CARBON CARBON CARBON	1.5K 5% 1K 5% 1.5K 5% 1K 5% 180K 5%	1/6W 1/6W 1/6W 1/6W 1/6W	
R203 1-247-881-00 R204 1-247-835-00	CARBON 120K	5% 1/6	ı	R318 R319 R323	1-247-849-00 1-247-855-00 1-247-815-00	CARBON CARBON CARBON	5.6K 5% 10K 5% 220 5%	1/6W 1/6W 1/6W	



Ref.No.Part No.	Description			Remark	Ref.N	o.Part No.	Description				Remark
R324 1-247-815-00 R325 1-247-821-00 R328 1-247-843-00 R329 1-247-871-00 R330 1-247-827-00	CARBON CARBON CARBON	220 5% 390 5% 3.3K 5% 47K 5% 680 5%	1/6W 1/6W 1/6W 1/6W 1/6W		R511 R512 R513 R514 R515	1-247-871-00 1-214-171-00 1-247-867-00 1-212-364-00 1-244-859-51	CARBON META L CARBON META L CARBON	47K 43K 33K 2•2 270	5% 1% 5% 5% 5%	1/6W 1/4W 1/6W 1W 1/2W	F
R331 1-247-871-00 R332 1-247-877-00 R333 1-247-831-00 R334 1-247-829-00 R335 1-247-865-00	CARBON CARBON CARBON	47K 5% 82K 5% 1K 5% 82 0 5% 27K 5%	1/6W 1/6W 1/6W 1/6W 1/6W		R516 R517 R518 R519 R520	1-247-844-00 1-247-837-00 1-247-873-00 1-247-859-00 1-247-864-00	CARBON CARBON CARBON CARBON CARBON	3.6K 1.8K 56K 15K 24K	5% 5% 5% 5% 5%	1/6W 1/6W 1/6W 1/6W 1/6W	
R336 1-247-865-00 R337 1-247-853-00 R338 1-247-839-00 R339 1-247-850-00 R340 1-247-843-00	CARBON CARBON	27K 5% 8.2K 5% 2.2K 5% 6.2K 5% 3.3K 5%	1/6W 1/6W 1/6W 1/6W 1/6W		R521 R522 R523 R524 R525	1-247-864-00 1-247-839-00 1-247-845-00 1-247-817-00 1-247-859-00	CARBON CARBON CARBON CARBON CARBON	24K 2.2K 3.9K 270 15K	5% 5% 5% 5% 5%	1/6W 1/6W 1/6W 1/6W 1/6W	
R341 1-247-819-00 R342 1-247-819-00 R343 1-247-819-00 R344 1-247-843-00 R345 1-247-843-00	CARBON CARBON	330 5% 330 5% 330 5% 3.3K 5% 3.3K 5%	1/6W 1/6W 1/6W 1/6W 1/6W		R526 R527 R528 R529 R534	1-202-816-00 1-246-469-00 1-202-830-00 1-247-769-00 1-202-832-51	COMPOSITION CARBON COMPOSITION CARBON COMPOSITION	68K 680 10K 2.7 15K	5% 5%	1/2W 1/4W 1/2W 1/6W 1/2W	
R346 1-247-843-00 R347 1-247-815-00 R348 1-247-835-00 R350 1-247-807-00 R351 1-247-807-00	CARBON CARBON CARBON	3.3K 5% 220 5% 1.5K 5% 100 5% 100 5%	1/6W 1/6W 1/6W 1/6W 1/6W		R535 R536 R537 R539 R540	1-247-837-00 1-247-845-00 1-247-843-00 1-247-813-00 1-247-830-00	CARBON CARBON CARBON CARBON CARBON	1.8K 3.9K 3.3K 180 910	5% 5% 5% 5% 5%	1/6W 1/6W 1/6W 1/6W 1/6W	
R352 1-247-855-00 R353 1-247-863-00 R354 1-246-465-00 R355 1-247-835-00 R356 1-247-843-00	CARBON CARBON CARBON CARBON CARBON	10K 5% 22K 5% 470 5% 1.5K 5% 3.3K 5%	1/6W 1/6W 1/4W 1/6W 1/6W		R542 R545 R546 R547 R548	1-247-847-00 1-247-855-00 1-247-005-00 1-246-979-00 1-246-994-00	CARBON CARBON CARBON CARBON CARBON	4.7K 10K 100 1.2 680	5% 5% 5% 5% 5%	1/6W 1/6W 1/4W 1/8W 1/8W	F F F
R357 1-247-887-00 R359 1-247-863-00 R360 1-247-895-00 R361 1-247-857-00 R362 1-247-855-00	CARBON CARBON CARBON CARBON CARBON	220K 5% 22K 5% 470K 5% 12K 5% 10K 5%	1/6W 1/6W 1/6W 1/6W 1/6W		R549 R550 R551 R552 R553	1-247-847-00 1-247-819-00 1-213-148-00 1-246-783-00 1-246-979-00	CARBON CARBON METAL CARBON CARBON	4.7K 330 2.7K 1K 1.2	5% 5% 5% 5%	1/6W 1/6W 1W 1/8W 1/8W	F F
R363 1-247-861-00 R364 1-247-867-00 R365 1-247-875-00 R366 1-247-865-00 R368 1-247-857-00	CARBON CARBON CARBON CARBON CARBON	18K 5% 33K 5% 68K 5% 27K 5% 12K 5%	1/6W 1/6W 1/6W 1/6W 1/6W		R554 R556 R557 R558 R559	1-212-936-51 1-246-493-00 1-246-531-00 1-213-139-00 1-212-372-00	FUSIBLE CARBON CARBON METAL METAL	1.2 6.8K 270K 470 10	5% 5% 5% 5% 5%	1/2W 1/4W 1/4W 1W 1W	F F
R369 1-247-831-00 R370 1-247-843-00 R371 1-247-840-00 R501 1-247-819-00 R502 1-247-855-00	CARBON CARBON CARBON CARBON CARBON	1K 5% 3.3K 5% 2.4K 5% 330 5% 10K 5%	1/6W 1/6W 1/6W 1/6W 1/6W		R560 R561 R562 R563 R564	1-246-996-00 1-247-835-00 1-247-032-00 1-247-801-00 1-247-865-00	CARBON CARBON CARBON CARBON CARBON	2.2K 1.5K 68 56 27K	5% 5% 5% 5%	1/8W 1/6W 1/8W 1/6W 1/6W	F
R503 1-247-843-00 R504 1-247-868-00 R505 1-247-855-00 R506 1-247-855-00 R507 1-247-861-00	CARBON CARBON CARBON CARBON CARBON	3.3K 5% 36K 5% 10K 5% 10K 5% 18K 5%	1/6W 1/6W 1/6W 1/6W 1/6W		R565 R566 R602 R603 R604	1-247-846-00 1-211-481-11 1-247-879-00 1-247-829-00 1-247-840-00	CARBON CARBON CARBON CARBON CARBON	4.3K 18K 100K 820 2.4K	5% 5% 5% 5% 5%	1/6W 1/8W 1/6W 1/6W 1/6W	F
R508 1-211-409-00 R509 1-213-158-00 R510 1-247-867-00		10 5% 18K 5% 33K 5%	1/8W 1W 1/6W	F	R605 R606 R607	1-202-730-51 1-214-597-00 1-217-465-00	COMPOSITION METAL FUSIBLE	8.2M 100K 0.47	10% 5% 10%	1/2W 2W 1W	F



Ref.No	Part No.	Description				Remark	Ref.No	Part No.	Description			Remark
R608 R609 R610 R611 R612	1-247-819-00 1-247-871-00 1-247-871-00 1-247-869-00 1-247-879-00	CARBON CARBON	330 47K 47K 39K 100K	5% 5% 5% 5% 5%	1/6W 1/6W 1/6W 1/6W 1/6W		T301 T302 T303 T501	1-426-121-00 1-408-520-00 1-408-520-00 1-437-090-00	NSFORMER DAT COIL, VARIAE COIL, VARIAE HDT			
R613 R614 R615 R616 R617	1-206-686-00 1-213-159-00 1-205-687-00 1-247-855-00 1-217-194-00	METAL WIREWOUND CARBON	22K 54K 10K	5% 5% 10% 5% 10%	2W 1W 7W 1/6W 2W	F F	T504	1-421-351-00 1-421-426-00 1-446-194-00 1-421-559-00	H.PCT TRANSFORMER TRANSFORMER	, CHOPPER D	RIVE; CD	
R618 R619 R620 R621 R622	1-246-795-00 1-247-889-00 1-247-825-00 1-247-829-00 1-247-879-00	CARBON CARBON CARBON	270K 560 820	5% 5% 5% 5%	1/8W 1/6W 1/6W 1/6W 1/6W		TH501 TH601			S-10K		
R623 R624 R625 R626 R627	1-247-855-00 1-247-865-00 1-247-891-00 1-247-873-00 1-202-463-00	CARBON CARBON CARBON	27K 330K 56K	5% 5% 5% 5% 5%	1/6W 1/6W 1/6W 1/6W 1/4W		30 January 200 Jan	<u>TUN</u> N 1-463-350-31	<u>IER</u>			
R628 R629 R630 R631	1-217-465-00 1-247-831-00 1-247-805-00 1-247-851-00	CARBON CARBON	0.47 1K 82 6.8K	5% 5%	1W 1/6W 1/6W 1/6W	F	X301	1-527-345-00	CRYSTAL, OSC		*****	*****
	VAR	IABLE RESISTOR	<u> </u>				٠	:A-1301-413-A	M2 BOARD, CO			
RV202 RV204 RV301	1-228-817-00 1-228-731-00 1-228-723-00 1-228-720-00 1-228-719-00	RES, ADJ, CER RES, ADJ, CER	RAMIC CA RAMIC CA RAMIC CA	ARBON ARBON ARBON	4.7K 1K			1-228-818-00 <u>CAP</u>				
RV305 RV306	1-228-723-00 1-226-709-00 1-228-824-00 1-228-815-00 1-228-816-00		.ID 4.7K RAMIC CA RBON 20K	(ARBON			C051 C052 C053 C054 C055	1-123-612-00 1-123-622-00 1-102-108-00 1-102-108-00 1-123-611-00	ELECT CERAMIC CERAMIC	2.2MF 22MF 150PF 150PF 1MF	20% 20% 10% 10% 20%	50V 16V 50V 50V 50V
RV310 RV501 RV502	1-228-816-00 1-228-723-00 1-228-160-11 1-221-970-XX 1-228-816-00	RES, ADJ, CEF RES, ADJ, MET RES, ADJ, CAF	RAMIC CA FAL GLAZ RBON 500	ARBON ZE 5K O	4.7K		C056 C057 C058 C060 C062	1-102-074-00 1-123-613-00 1-123-613-00 1-123-613-00 1-123-611-00	ELECT	0.001MF 3.3MF 3.3MF 3.3MF 1MF	10% 20% 20% 20% 20%	50V 50V 50V 50V
RV505 RV506	1-228-724-00 1-224-250-XX 1-223-067-00 1-228-721-00	RES, ADJ, MET RES, ADJ, WIR	TAL GLAZ REWOUND	ZE 2.2 120	K		C063 C064 C065 C066 C067	1-123-818-11 1-123-619-00 1-123-619-00 1-123-613-00 1-123-620-00	ELECT ELECT	22MF 4.7MF 4.7MF 3.3MF 10MF	20% 20% 20% 20% 20%	25V 50V 50V 50V 25V
	FIL	<u>TER</u>					C068 C069	1-123-620-00 1-123-611-00		10MF 1MF	20% 20%	25V 50V
	1-404-433-00 : 4-336-029-00		D, SF201	1					.TER			
	SPA	RK GAP					CF051	1-527-476-00	OSCILLATOR,	CERAMIC		
S G501	1-519 - 063-XX	DISCHARGING (GAP									

The components identified by shading and mark <u>A</u> are critical for safety. Replace only with part number specified.

M2 M1 C

Ref.N	o.Part No.	Description		Re	emark	Ref.No	Part No.	Descriptio	<u>n</u>			Remark
D051 D052 D053 D054	8-719-911-19 8-719-911-19 8-719-911-19 8-719-911-19					R060 R061 R062 R063 R064	1-247-867-00 1-247-871-00 1-247-871-00 1-247-871-00 1-247-867-00	CARBON CARBON CARBON CARBON CARBON	33K 47K 47K 47K 33K	5% 5% 5% 5%	1/6W 1/6W 1/6W 1/6W 1/6W	
D055 D056	8-719-911-19 8-719-911-19	DIODE 1SS119 DIODE 1SS119				R065 R066 R067	1-247-839-00 1-247-833-00 1-247-865-00	CARBON CARBON CARBON	2.2K 1.2K 27K	5% 5% 5%	1/6W 1/6W 1/6W	
D057 D058 D059 D060	8-719-911-19 8-719-911-19 8-719-911-19 8-719-911-19	DIODE 1SS119 DIODE 1SS119 DIODE 1SS119 DIODE 1SS119				R068 R069 R070	1-247-875-00 1-247-831-00 1-247-849-00	CARBON CARBON	68K 1K 5.6K	5% 5%	1/6W 1/6W 1/6W	
D061 D062 D075 D079	8-719-911-19 8-719-911-19 8-719-911-19 8-719-911-19	DIODE 1SS119 DIODE 1SS119 DIODE 1SS119 DIODE 1SS119				R071 R072 R073 R074	1-247-849-00 1-247-833-00 1-247-833-00 1-247-871-00	CARBON CARBON CARBON CARBON	5.6K 1.2K 1.2K 47K	5% 5% 5% 5%	1/6W 1/6W 1/6W 1/6W	
D080 D082	8-719-911-19	DIODE 1SS119 DIODE 1SS119				R075 R076 R077 R078	1-247-815-00 1-247-825-00 1-247-855-00 1-247-855-00	CARBON CARBON CARBON CARBON	220 560 10K 10K	5% 5% 5% 5%	1/6W 1/6W 1/6W 1/6W	
	<u>IC</u>					R079	1-247-863-00		22K	5 %	1/6W	
IC2 IC3	8-759-600-03 8-759-600-44						SWI	тсн				
103	COI					S 0 5 2	1-553-651-00	SWITCH, SL	I DE			
			70			*****	*****	*****	*****	****	*****	*****
L052 L053 L054	1-408-462-11	MICRO INDUCTOR 47 MICRO INDUCTOR 47 MICRO INDUCTOR 47	70UH			٠	:1-608-176-00	M1 BOARD				
	CON	NECTOR					:1-556-332-00 :1-555-706-00				OP .	
M1 M2 M4		PLUG, CONNECTOR 3 PLUG, CONNECTOR 3 PLUG, CONNECTOR 1	3P			•	<u>DIO</u>		1.551 (240	, 2	0.	
	♦:1-560-278-00 ♦:1-560-278-00	PLUG, CONNECTOR I	LOP			LED001	8-719-803-20	DIODE TLR3	20			
м7	♦:1- 560-278 - 00	PLUG, CONNECTOR 3	3p				<u>SMI.</u>	ТСН				
М8	♦: 1-560-278-00 ♦: 1-560-278-00	PLUG, CONNECTOR 3	3P			S001 S002	1-553-766-00 1-553-766-00					
	TRA	NSISTOR				*****	*****	******	******	****	*****	******
Q051 Q061 Q071	8-729-117-54 =>8-729-245-83 8-729-178-54	TRANSISTOR 2SA117 TRANSISTOR 2SC245 TRANSISTOR 2SC278	58			٠	:A-1330-383-A	C BOARD, C	OMPLETE			
Q071		ISTOR LSGE				٠	:1-608-174-00 1-526-645-00		T			
R051	1-247-857-00			1/6W			CON	NECTOR				
R052 R053 R054 R055	1-247-871-00 1-247-871-00 1-247-859-00 1-247-879-00	CARBON 47K CARBON 47K CARBON 15K CARBON 100	< 5%	1/6W 1/6W 1/6W 1/6W		C3 &	:1-508-786-00 1-506-348-XX :1-560-126-00	3P PLUG (L)	5MM)	6P	
R056	1-247-863-00	CARBON 22k		1/6W	.		CAP	ACITOR				
R057 R058 R059	1-247-863-00 1-247-849-00 1-247-871-00	CARBON 22k CARBON 5.6 CARBON 47k	5K 5%	1/6W 1/6W 1/6W		C701 C702	1-123-816-00 1-129-737-00		47MF 0.047N	1F	20% 20%	50V 630V



Ref.No	Part No.	Description			Remark	Ref.	No.Part No.	Description			Remark	
C703 C705	1-102-249-00 1-101-361-00	CERAMIC CERAMIC	680PF 150PF	20% 5%	2KV 50V		♦:1-608-175-00	H BOARD				
C706 C707	1-102-978-00 1-101-361-00	CERAMIC CERAMIC CERAMIC	220PF 150PF 330PF	5% 5% 20%	50V 50V 2KV		a :1-556-331-00	CONNECTOR AS	SY (2.5MM)	3P		
C708	1-102-155-00		330F1	20,6	ZK*		SWITCH					
	<u>COI</u>	-	op 100m			S003 S004	1-553-766-00 1-553-766-00	SWITCH, KEY SWITCH, KEY				
L701 L702		MICRO INDUCT COIL, CHOKE					******	•		*****	****	
	TRA	NSISTOR					♦:1-606-794-00	N BOARD				
0701 0702 0703	8-729-322-78 8-729-322-78 8-729-322-78	TRANSISTOR 2: TRANSISTOR 2: TRANSISTOR 2:	SC2278				♦:1-556-332-00	****** CONNECTOR (2				
•	RES	ISTOR				}	a :4-342-117-00 a :4-342-118-00	CASE, SHIELD				
R077	1-247-767-00	CARBON	5.6K	1/6W			CAP	ACITOR				
R701 R702	1-247-821-00 1-247-847-00	CARBON CARBON	390 5% 4.7K 5%	1/6W 1/6W		C1 C2	1-123-617-00 1-123-617-00	ELECT ELECT	10MF 10MF	20% 20%	16V 16V	
R703 R704	1-206-692-00 1-247-847-00	METAL CARBON	15K 5% 4.7K 5%	2W 1/6W	F	C3	1-123-617-00 1-123-617-00 1-161-019-00	ELECT CERAMIC	10MF 0.033MF	20% 10%	16V 25V	
R705	1-247-819-00	CARBON	330 5%	1/6W	F [.]	C5	1-101-019-00	MYLAR	0.0033MF	5%	50V	
R706 R707	1-206-692-00 1-247-823-00	METAL CARBON	15K 5% 470 5%	2W 1/6W		C6	1-123-821-00	ELECT	47MF	20%	16V	
R708 R709	1-247-847-00 1-206-692-00	CARBON METAL	4.7K 5% 15K 5%	1/6W 2W	F		DIO	DDE				
R710	1-202-824-00 1-202-842-51	COMPOSITION COMPOSITION	3.3K 220K	1/2W 1/2W		D1	8-719-110-32	DIODE PH302B				
R711 R713	1-202-824-00	COMPOSITION	3.3K	1/2W			. <u>IC</u>					
R714 R715	1-202-814-51 1-202-815-51	COMPOSITION COMPOSITION	33K 47K	1/2W 1/2W		IC1	8-759-113-73	IC UPC1373H				
R716	1-202-824-00	COMPOSITION	3.3K	1/2W			<u>CO1</u>	<u> </u>				
R717 R718	1-202-719-00 1-202-549-00	COMPOSITION	1M 10 100 10	% 1/2W		L1	1-404-310-00	COIL 4.7MMH				
R719 R720	1-202-719-00 1-202-843-51	COMPOSITION COMPOSITION	1M 10 270K	% 1/2W 1/2W		****	*****	******	******	*****	*****	
R721 R722	1-202-846-00 1-202-839-51	COMPOSITION	470K 120K	1/2W 1/2W				SCELLANEOUS				
R726 R727	1-247-807-00 1-247-807-00	CARBON	100 5% 100 5%	1/6W			<u> </u>			,		
R728	1-247-807-00	CARBON	100 5%	1/6W			A.1-451-185-00 1-452-032-00	MAGNET. DISH	(: 10mm ≰			
		RIABLE RESISTO				}		MAGNET, BMC		1 5mm?		
	1-226-850-00 1-228-577-00		RBON 4.7K RBON 220				1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	ROD ANTENNA				
	1-226-850-00 1-228-577-00						♦:1-509-887-00 ↑.1-534-817-XX	CONNECTOR AS				
RV705	1-226-850-00	RES, ADJ, CA	RBON 4.7K				△ 1-536-683-00 1-543-171-00	CORE, RING	JUAXIAL ANIE	NNA		
RV706 RV707	1-226-114-00 1-226-114-00	RES, ADJ, ME RES, ADJ, ME	TAL GLAZE	2.2M 2.2M			4:1-556-684-00					
		- •		•			♦:1-555-225-00 ♦:1-555-441-00	CONNECTOR AS	SSY (LARGE)			
							♦:1-555-838-00 ♦:1-556-017-00	CONNECTOR AS	SSY (2.5MM)			
							1-556-054-00	ANT PLUG ASS	5 Y			

The components identified by shading and mark \bigwedge are critical for safety. Replace only with part number specified.

Ref.No	Part No.	Description	Remark
٠	:1-556-408-00	CONNECTOR ASSY (LARGE) 3P	
J901B	1-507-539-11 1-507-539-11	CAP, ELECT (NONPOLAR) 2.2MF CAP, CERAMIC 470PF JACK, JM35A JACK, JM35A COIL, DE GAUSSING	
Q901 = Q902 R901	1-426-086-31 >8-729-341-34 8-729-398-09 1-244-851-00 1-553-225-00	COIL, DEGAUSSING TRANSISTOR 2SC1413A TRANSISTOR 2SD898B RES, CARBON 120.00 (1/2W) SWITCH, PUSH	
T901 <u>A</u> T502 <u>A</u>	1-439-294-00	SPEAKER TRANSFORMER, OUTPUT: SOT TRANSFORMER ASSY, FLYBACK: FBT CRT (330MB22)	

ACCESSORIES AND PACKING MATERIALS

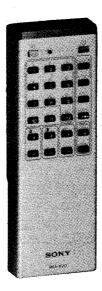
Part No.	Description	٠	Remark
A-1470-588-A 1-504-034-72 3-701-352-00 4-316-037-00 4-362-036-00	COMMANDER ASSY (RM-620) MAGNETIC EARPHONE ME-20 BAG, POLYETHYLENE BAG, POLYETHYLENE INDIVIDUAL CARTON		
4-362-034-00 4-362-035-00 4-493-729-11	CUSHION (UPPER) (ASSY) CUSHION (LOWER) (ASSY) MANUAL INSTRUCTION		

When indicating parts by reference number, please include the board name.

The components identified by shading and mark A are critical for safety. Replace only with part number specified.

RM-620

SERVICE MANUAL



September, 1982

SPECIFICATIONS

Remote control system

Infrared control

Power requirements

3 V dc

2 IEC Designation R6 batteries (size AA)

Dimensions

Approx. $54 \times 18 \times 150$ mm (w/h/d)

Weight

Approx. 120 g including batteries

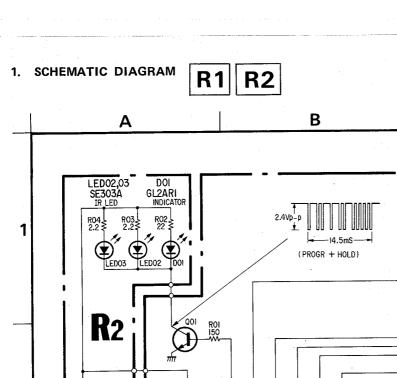
Accessory supplied

IEC Designation R6 batteries (2)

Design and specifications are subject to change without notice.

REMOTE CONTROL UNIT



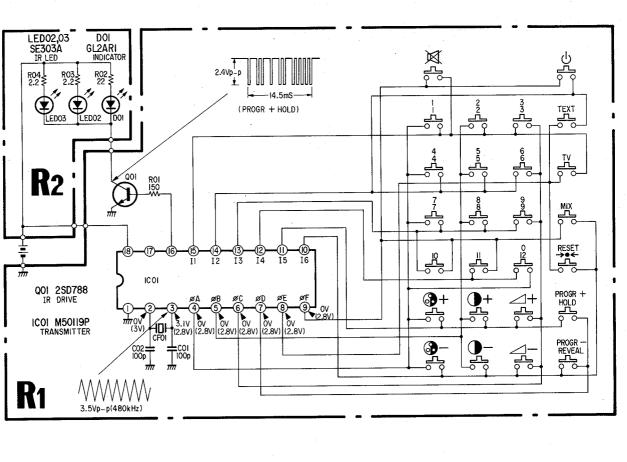


2

3

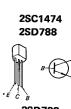
4

5



C

MODE IC PIN	10	П	12	13	14	15	17	QOIB	QOIC
(3.2	3.2	3.2	3.2	2.8	, 3.2	0	0	2.6
M	3,2	3.2	3.2	3.2	3.2	2.8	0	0	2.6
l l	3.2	3.2	3.2	3.2	3,2	2.8	0	0	2,6
2	3,2	3.2	3.2	3.2	3.2	2.8	0	0	2.6
3	3,2	3.2	3.2	3.2	3.2	2.8	0	0	2.6
4	3.2	3.2	3,2	3.2	2.8	3.2	0	0	2.6
5	3.2	3.2	3.2	3.2	. 2.8	3,2	0	0	2.6
6	3,2	3.2	3.2	3.2	2.8	3.2	0	0	2.6
7	3,2	3.2	3,2	2.8	3.2	3,2	0	0	2.6
8	3.2	. 3,2	3.2	2.8	3.2	3.2	0	0	2.6
9	3.2	3.2	3,2	2,8	3.2	3.2	0	0	2,6
10	3,2	3,2	3,2	2.8	3,2	3.2	0	0	2.6
11	3.2	3.2	2.8	3.2	3.2	3.2	0	0	2,6
12	3.2	3.2	2,8	3.2	3.2	3.2	0 -	0	2.6
TEXT	3,2	3,2	3.2	3.2	2.8	3.2	0	0	2.6
TV	3.2	3.2	3,2	3.2	3.2	3.2	0	0	2.6
MIX	2.8	3.2	3.2	3.2	3.2	3,2	0	0	2.6
RESET	2.8	3.2	3.2	3.2	3.2	3.2	0	0	2.6
3 +	3.1	2.7	3.1	3.1	3.1	3.1	0.2	0.1	2.3
3 -	2.7	3.1	3.1	3.	3.1	3.1	0.2	0,1	2.3
+	3.1	2.7	3.1	3.1	3,1	3.1	0.2	0.1	2.3
1 -	2.7	3,1	3.	3.1	3.1	3.1	0.2	0.1	2.3
<u></u>	3.1	2.7	3.1	3.1	3.1	3,1	0.2	0.1	2,3
\triangle	2.7	3.1	3.1	3.1	3.1	3.1	0.2	0.1	2.3
PROGR +	3.1	2.7	3.1	3.1	3.1	3.1	0.2	0.1	2.3
PROGR -	2.7	3.1	3.1	3.1	3.1	3.1	0,2	0,1	2.3



D



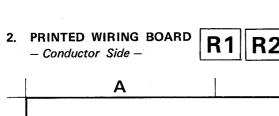
GL2AR1



SE303AX



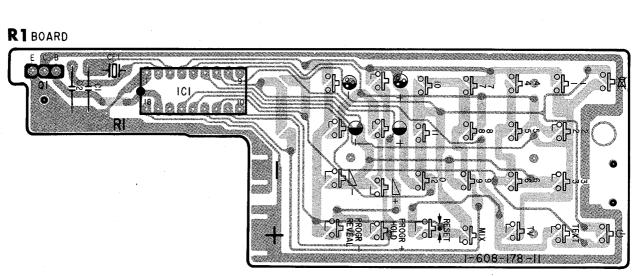




2

3

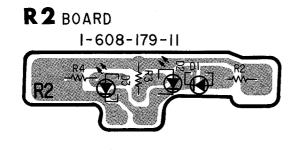
5



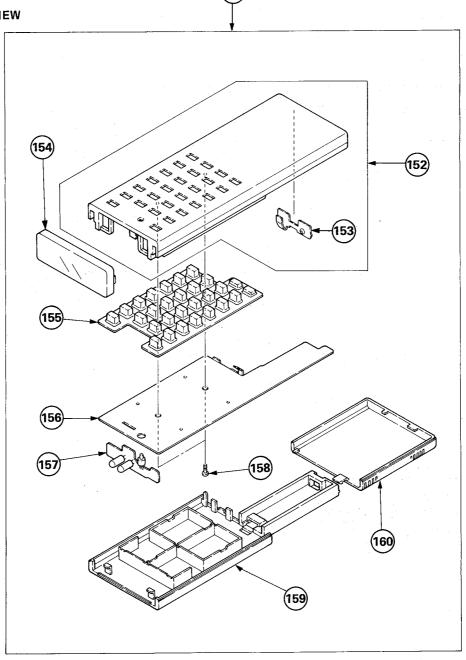
В

С

D



3. EXPLODED VIEW



No.	Part No.	Description	<u>Remark</u>	No.	Part No.	Description
151	A-1470-588-A	COMMANDER ASSY (SA-275)	152,153,154,155	155	4-362-022-00	SHEET, RUBBER
			156,157,158,159			
	4			157	♦:1- 608-179 - 00	
152	X-4362-007-0	CASE (UPPER) ASSY, COMMA	NDER 153	158		SCREW, TAPPING (BIND 2X5)
153	4-356-344-00	TERMINAL (A), BATTERY		159	4-362-023-00	CASE (LOWER), COMMANDER
154		PANEL, FRONT, COMMANDER		160	4-362-021-00	COVER, BATTÉRY

Remark

NOTE:
• Items with no part number and no description are not stocked because they are seldom required for routine service.
• The construction parts of an assembled part are indicated with a collation number in the remark column.

R1 R2

ELECTRICAL PARTS LIST

- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- =>: Due to standardization, interchangeable replacements may be substituted for parts specified in the diagrams.

Part No.

 Items marked " & " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

CAPACITORS
• MF : μF, PF : μμF

RESISTORS

- All resistors are in ohms
- F : nonflammable

COILS

• MMH : mH, UH : μH

When indicating parts by reference number, please include the board name.

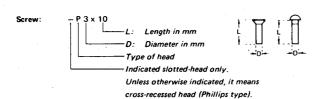
Ref.No	Part No.	Descriptio	<u>n</u>		*	Remark
٠	:1-608-178-00	R1 B0ARD				
	: 4-362-019-00 : 4-362-020-00	TERMINAL (TERMINAL (
	CAP	ACITOR				
C01 C02	1-161-271-00 1-161-271-00	CERAMIC CERAMIC	100PF 100PF		5% 5%	50V 50V
	FIL	TER				
CF01	1-527-476-00	OSCILLATOR	, CERAMIC			-
	<u>IC</u>					
IC01	8-759-600-07	IC M50119P				
	TRA	NSISTOR				
Q01	8-729-378-84	TRANSISTOR	2SD788			
*****	*****	*****	*****	****	*****	*****
٠	:1-608-179-00	R2 B0ARD				
	DIO	DE				
	8-719-900-23 =>8-719-193-03 =>8-719-193-03	# · · · · · · · · · · · · · · · ·	3A X			
	RES	ISTOR				
R02 R03 R04	1-247-791-00 1-247-767-00 1-247-767-00		22 2.2 2.2	5% 5% 5%	1/6W 1/6W 1/6W	,
*****	******	******	*****	*****	*****	*****
ACCESSORIES AND PACKING MATERIALS						

Description

3-701-620-00 BAG, POLYETHYLENE

Remark

HARDWARE NOMENCLATURE



Reference Designation	Shape	Description	Remarks
		SCREWS	
Р €∋		pan-head screw	binding-head (B) screw for replacement
PWH	€13	pan-head screw with washer face	binding-head (B) screw and flat washer for replacement
PS PSP	853	pan-head screw with spring washer	binding-head (B) screw and spring washer for replace- ment
PSW PSPW	()() ()	pan-head screw with spring and flat washers	binding-head (B) screw and spring and flat washers for replacement
R	€3	round-head screw	binding-head (B) screw for replacement
K	₽	flat-countersunk-head screw	
RK	€⊃	oval-countersunk-head screw	
В	₽	binding-head screw	
T (₽		truss-head screw	binding-head (B) screw for replacement
F	₽:>	flat-fillister-head screw	
RF 🕀		fillister-head screw	
BV	€⊐	brazier-head screw	· ·

Nut, Washer, R	etaining ring:
N	3Diameter of usable screw or shaft
Ĺ	Reference designation

Reference Designation	Shape	Description	Remarks
		SELF-TAPPING SCRE	ws
TA	(13)	self-tapping screw	ex: TA, P 3 x 10
PTP E		pan-head self-tapping screw	binding-head self- tapping (TA, B) screw for replacement
PTPWH	 	pan-head self-tapping screw with washer face	binding-head self tapping (TA, B) screw and flat washer for replacemen
PTTWH		pan-head thread-rolling screw with washer face	binding-head (B) screw and flat washer for replacemen
		SET SCREWS	
sc	-€3-	set screw	
SC	⊕ €⊒-	hexagon-socket set screw	ex: SC 2.6 x 4, hexagon socket
		NUT	
N	-[]-(-)-	nut	
		WASHERS	
w	0	flat washer	
sw	-⊚ { -	spring washer	
LW	0	internal-tooth lock washer	ex: LW3, internal
LW	٥	external-tooth lock washer	ex: LW3, external
		RETAINING RINGS	
٤	0	retaining ring	
G	@	grip-type retaining ring	